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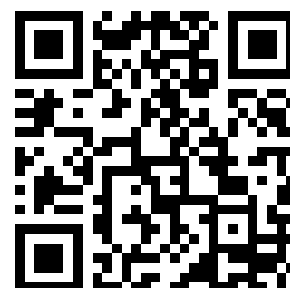


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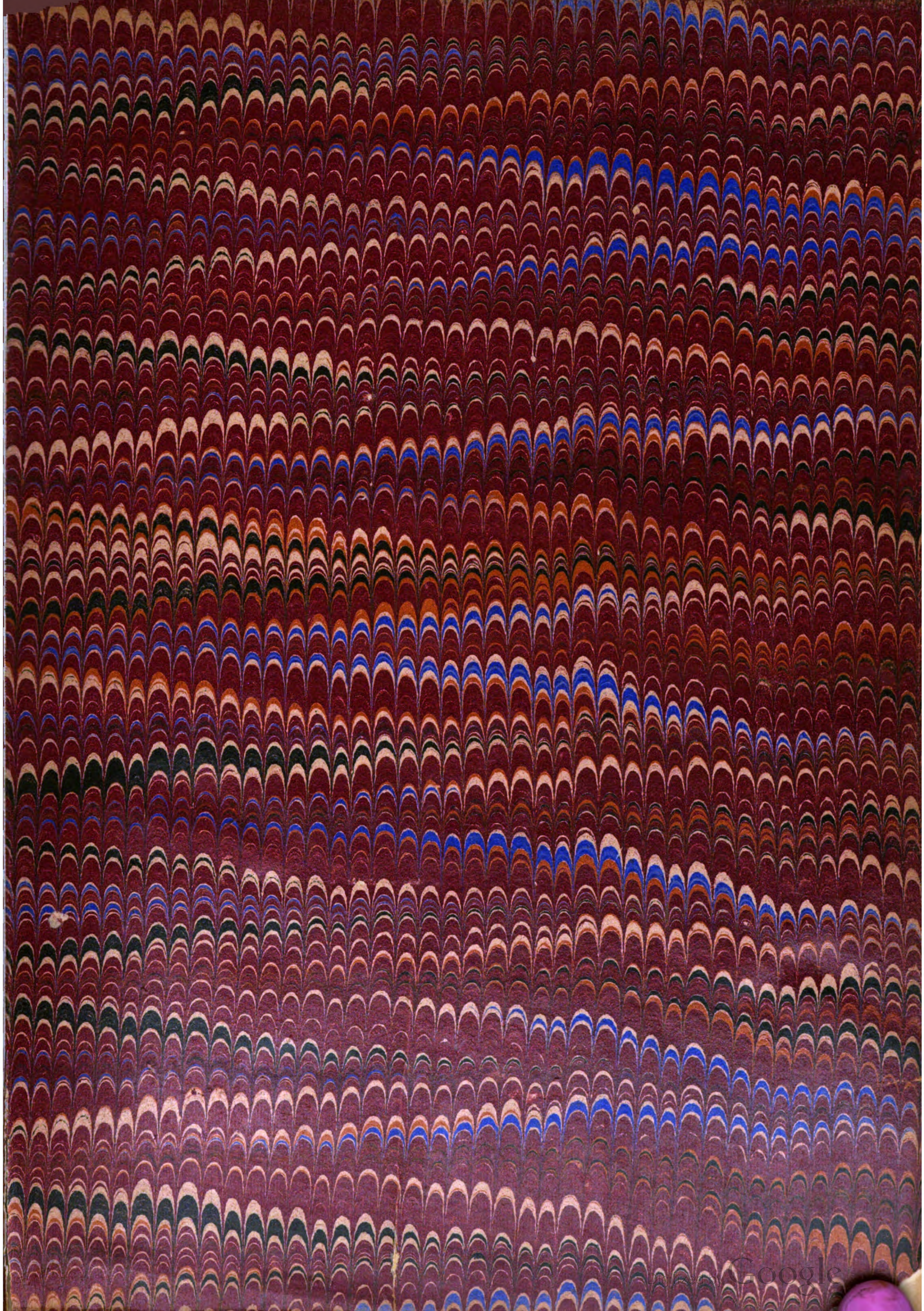




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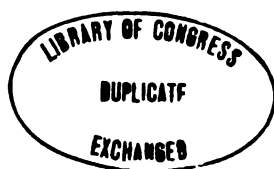












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AND FOR CIRCULATION IN

THE UNITED STATES OF AMERICA,

And in Europe, Asia, Africa, British North America, Central and South America, Mexico, West Indies, Australia, New Zealand, East Indies, China, Japan and the Sandwich Islands.

VOL. XX.—NO. 1.

NEW YORK, JULY, 1887.

WHOLE NO. 122.

THE AMERICAN MAIL is the pioneer journal of its class, and was established to press at the claims and to further the interests of American manufacturers and producers in every attainable market; also to be a medium for the extension of enterprise at every point, foreign and domestic, where an opportunity for the growth of trade might become apparent.

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is read by buyers in every line of trade, and it is regarded as a most valuable medium for information as to all kinds of goods, products and other matters of commercial importance. It reaches leading manufacturers and others concerned in all departments of industry, such as iron and steel production; mechanical construction and engineering; mining; cotton, silk, woolen and other textile interests; milling; and in fact every branch of American production, inventive skill and genius.

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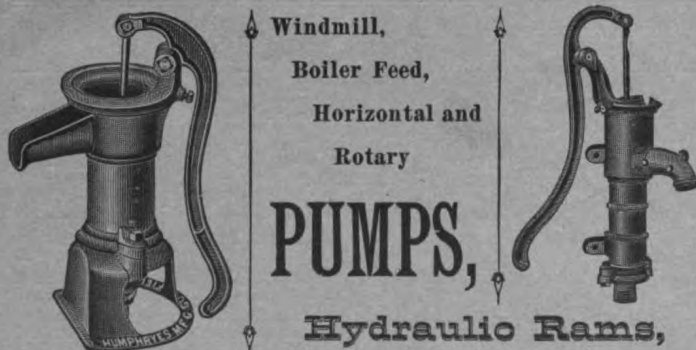
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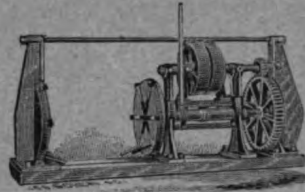
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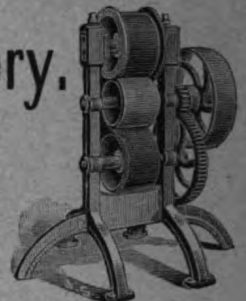
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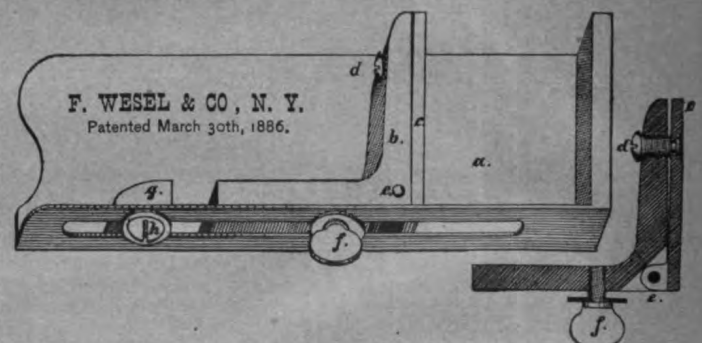
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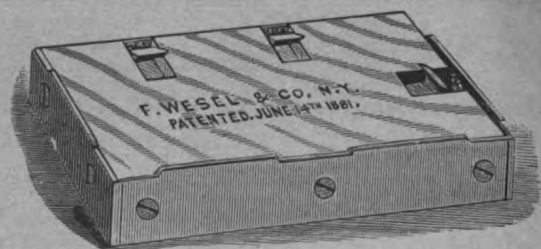


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# AMERICAN MAIL and

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in one Edition, for all Countries. }

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### American Bridge Building.

EARLY BRIDGES—DIFFERENT FORMS—BRIDGE BUILDING A SCIENCE—DEMANDS FOR BRIDGES IN AMERICA—EXTENT OF THE INDUSTRY IN THIS COUNTRY—FOUNDATIONS—MATERIAL—SUSPENSION BRIDGES—TWO GREATEST BRIDGES IN THE WORLD—THE NEW YORK AND BROOKLYN BRIDGE—NIAGARA CANTILEVER BRIDGE—TRUSS BRIDGE—FOREIGN DEMAND FOR AMERICAN BRIDGES.

THE art of bridge building has, it is believed, been carried to a greater extent of perfection in the United States than anywhere else in the world at this time. The deep and wide rivers and

might be nailed from one to the other, thus affording a roadway wide enough for a vehicle. This plan can be imitated with cut timbers. But many streams are too wide and some have no solid banks, so that it would be impossible to go over them in this way. These obstacles have led engineers and railway managers to consider other methods of construction, which shall not be liable to these objections, and still shall not cost too much. All early bridges, with few exceptions, were designed to cross flowing streams, but modern bridge building has to encounter other difficulties and put up structures where formerly none were called for. Bridges now cross great hollows and depressions, where they are known as viaducts; they run over the surfaces of lakes and arms of the sea, like those over Cayuga Lake and Newark Bay; they



THE NEW YORK AND BROOKLYN BRIDGE.

the great number of railways have compelled great attention to be paid to this industry. New forms have been struck out, both in Europe and here, but the application of theory to practice has been best done in this country. A hundred years ago the only bridges known were of brick or stone, thrown into the shape of arches, or timber bridges, crossing from one high bank to another, or else resting upon piers twenty or thirty feet apart. London had a population of 700,000 before it had more than one bridge, and very few towns had more until highways were much improved or railways came into existence.

The simplest form of a bridge is that of a tree felled across a stream. On this pedestrians could, if the tree were large enough, pick their way across. If two should fall in the same direction, boards

go the length of cities, there being known as elevated railways; they carry water and oil over hollows or navigable streams, or canals over the surface of rivers, as the Erie canal is carried over the Mohawk. They are then known as aqueducts. Some swing on a pivot from a pier in the middle of the stream, and others are framed in two halves which rotate far enough one way by opening to leave room for vessels to pass in the centre, or the other way by closing so that the parts shall join each other, thus making a continuous roadway. There are also draw bridges and recoiling bridges. Of the former Chicago has many examples, as a navigable river divides one part of the city from the other. Suspension bridges are very common here, the most gigantic in the world being that which connects the cities of New York



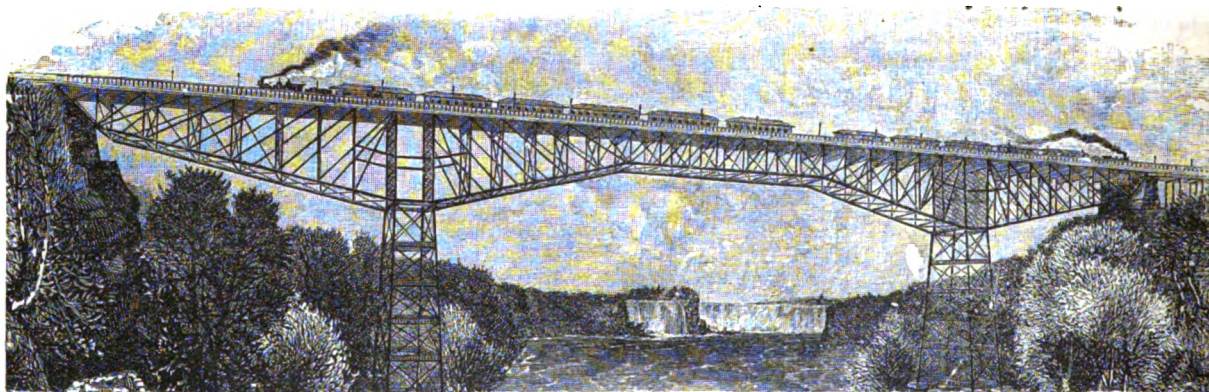
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and Brooklyn. As a result of these requirements, bridge building has with us become a science, many engineers devoting themselves entirely to this branch of construction, and many iron foundries and contractors are doing nothing but supplying their needs. Another special demand frequently met with is when a railway requires a dozen or two dozen small bridges, all of pretty near the same pattern. None of these conditions are found in other countries. We have twenty or forty rivers, each over a thousand miles in length, and of those larger than the Thames there are several hundred, while of great and majestic rivers, as large as the Danube, each of two thousand miles or more in length, there are a dozen. Three-quarters of a mile for a bridge is common, and those that are half a mile long are counted by hundreds. Some of the great ones are two and three miles long in total extent. It is thus seen that if thorough technical education, combined with great practice, under all kinds of conditions, would tend to make any class of engineers, metal workers or contractors perfect, those conditions are found in this country.

The bridge-building industry of the United States is very large. It requires 200,000 tons of iron a year, at the average value of \$100 a ton. These pieces of iron must be taken to the place where they are to be put up, the foundations laid, the masonry erected and the iron-work wrought to its place and secured together. Every bridge is designed by itself. Such a thing as one in stock, even of the smallest kind, is not known to the trade. When one is called for, the railway,

then built upon them. But when there is much mud and the stream wide, so that the necessity of submerged stone piers cannot be avoided, great chests or caissons are used, which are huge boxes made tight and strong, into which air is pumped from above. The pressure at the greatest depths, or about ninety feet, is a little more than one atmosphere. With such a foundation the work for the men is so dangerous that a physician examines each man before he goes down, to see that he is in proper condition. For greater depths a caisson is formed something like a ship. In the centre and fore and aft there are holes communicating to the top, in each of which a dredger is at work. The pressure of the caisson, made of solid timbers and iron, in which the work of stone-laying has been begun, forces the mud or loose earth to the sides of the structures and to these holes; as the dredges continue their work all the underlying substance is forced into the holes and is brought up by the scoop. The more earth that is excavated the deeper the caisson settles, until it is finally far enough down. One which some American engineers are now operating in New South Wales will attain a depth of 165 feet.

The chief material used for the building of piers is stone. Brick is employed very little or not at all, but there is nearly always some stone near at hand which is very good, either granite, sandstone or limestone. Upon these piers and abutments the iron superstructure is built. Early builders of this sort thought that solid bars of metal, as wide one way as another, would answer the best, but experience has



NIAGARA CANTILEVER BRIDGE.

municipality or corporation describes the situation, the soil, the lay of the ground, the span required, the length of the structure, the probable traffic, and all other circumstances which may influence the cost, and then invites proposals. The prominent firms engaged in this line may be called contracting engineers. First plans and diagrams are made, with a statement of cost. If these are accepted, work begins soon after. The length of the bridge and of the span is determined by considerations of convenience. The government, in cases where the river is a highway, prescribes the width and height of the central span, and the rest of the distance is divided according to considerations of cost. Long spans cost for the iron-work far more than short ones, taken foot by foot. If, therefore, the piers can be easily built, with light cost, there are many of them, as it diminishes the expense of the superstructure; if the foundation is bad, few piers are put in and the spans are long. In some cases, when the foundation is good, there is a long distance between them, as there may be a rapid current, which will be too much obstructed by the stone-work. Old London Bridge, torn down a century and a half ago, raised the water on one side of it two feet higher than on the other.

Nearly all bridges of a hundred or more feet long have central piers or several piers. These are nearly always of stone, and to make them firm there must be much preliminary work about the foundation. The ground is generally soft and insecure and excavations must be made to some depth in order to reach the solid rock or earth, as the case may be. In the Hudson River, at Poughkeepsie, where a great bridge is now constructing, there are a hundred feet of mud. With earthen foundations, where the water is shallow, after excavating the surface, piles are driven into the ground, one alongside the other, as close together as possible. These are from twenty to forty feet in length, and sometimes even longer. Occasionally these are allowed to project above the surface of mean high water, and are then sawed off evenly. Sometimes this is done several feet under water. The stone-work is

proved that other forms are stronger. Two planks laid edgewise across a small brook, from the one to the other of which bands are nailed, will stand far more upon them than the same planks will when laid flat. The latter, however, will resist wind more easily, and will not vibrate up and down stream. If, now, two planks sixteen feet long, two inches thick and a foot wide be sawed so that they shall only be six inches wide, and the parts cut off be suspended some two feet above the other parts, with cleats and counter-braces from one to the other, arranged like two W's, thus, WW, with each brace leaning against another one, the power of resistance is still more increased. This is the method of bridge building of the present day. A system of braces or trusses is so built in conjunction with the framework that it becomes an integral portion, and the bridge, which has comparatively little metal in it, becomes immensely strong. This is the most common kind of superstructure. The tubular bridge, of which so much has been written, is now rarely built. Much of the work of these bridges is now obtained direct from the rolling mills, where it is made of the form and shape desired; other parts are cast. Bessemer steel is also largely used, as it is still stronger than iron.

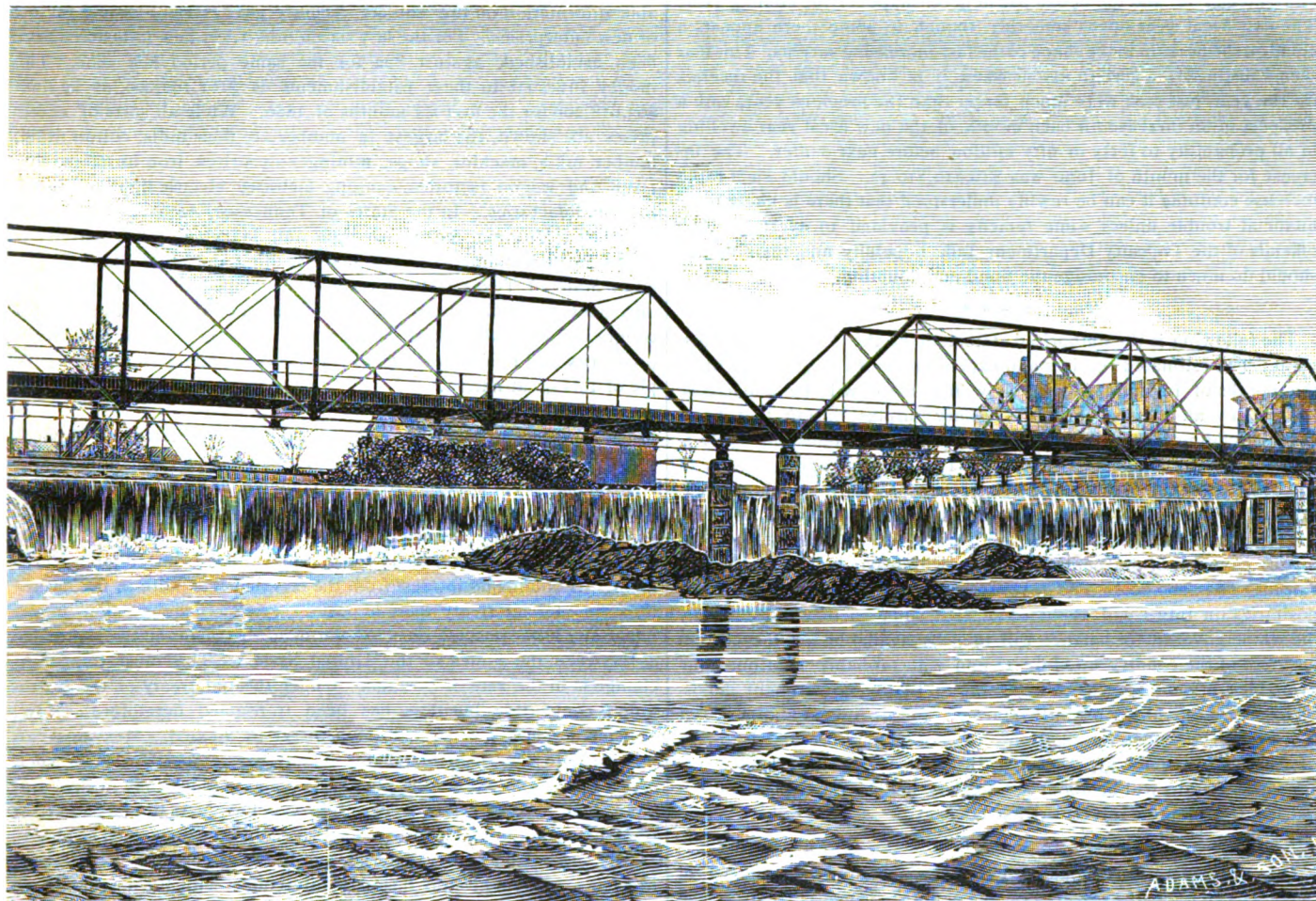
Suspension bridges are employed when there is a navigable stream below which cannot be interfered with or when the banks are very high, and it is easier to use them than to build up from the bed of the river. The Brooklyn Bridge is an instance of the former, and the Niagara Suspension Bridge of the latter. The principle of this kind of bridge is just the same as that of a rope thrown across from one side of a street to another to bear a banner. If one end breaks the whole tumbles down. The rope, if looked at carefully, is never straight, but sags somewhat, although the tighter it is drawn the less curvature exists. A rope of wire which had its ends in two tall buildings could be used to build a footway upon, and half a dozen such ropes would enable horses and wagons to cross if they had previously reached either end. When a sufficient number of wires or cables are put



together from one side to another of a stream or a hollow, there are many interesting questions in mechanics involved, but the theory of each is alike.

Two of the greatest bridges in the world are in America. One is the Victoria Bridge at Montreal. This is three miles long, and is supported upon solid piers, which are built of dimensions and strength sufficient to resist the greatest torrent of ice and water that can possibly beat against it. The other is the New York and Brooklyn Bridge, which crosses a narrow arm of the sea, known as the East River, and connects the great city of New York, containing 1,600,000 population, with Brooklyn, which has 700,000. It was begun on January 2, 1870, and was opened to business on May 24, 1883. It cost \$15,000,000, or about £3,000,000. This bridge is 5,989 feet long, and is of the suspension pattern, the length of the river span being 1,595 feet. It is 85 feet wide, contains a carriage-way, foot-way and two railway

secured. Cast iron and wrought iron are both used in these places. The cables which thus start here are 3,572 feet long, and are as taut as they can be made from the anchorages to the piers, and thence descend in a gentle curve of one foot in five and a half over the river. These suspend the entire footway, carriageway and railway, and all of the connecting ropes, clamps and ribs. There are four of these cables, each  $15\frac{3}{4}$  inches in diameter, and each composed of 5,296 parallel wires, not twisted, which have been dipped in oil to prevent oxidation. Out of these wires nineteen strands are made, and these again are secured to each other by a coating of wire which encircles them closely. The framework of the bridge is the steadiest known. A man jumping up and down will not occasion any oscillation, which can be said of no other structure of the kind. This is accounted for by the greater weight and stiffness. There are four cables, while other bridges have only two; the cables are larger and the counter-braces are more



TRUSS BRIDGE—AMERICAN PATTERN.

tracks. It is plain that there were many problems connected with this structure which did not come up elsewhere. As the distance from pier to pier is some 500 feet longer than that spanned anywhere else, the span required great strength. This is only another name in metallic structures for great weight, and a heavy superstructure necessitates massive foundations and piers. Building the latter was the first work attempted. These caissons, or frameworks, are 45 feet below water on the Brooklyn side, and on the New York side 78 feet. The one in Brooklyn is 168 feet long by 102 feet wide. After excavation ceased the hollows were filled with concrete. The towers erected upon these foundations are 140 feet in length by 50 feet in width at the water line, becoming slightly smaller as they go up. The total height above high water is 272 feet.

The use of the towers is simply to support the cables; these are not clamped or secured to the towers, but can move freely to or fro as the sun expands or the cold contracts them. The hold to the cables is in vast masses of masonry, some distance inland. Each of these is 90 by 119 by 132 feet, and weighs 120,000,000 pounds, and in them are imbedded great iron plates,  $2\frac{1}{2}$  feet thick, to which the cables are

numerous than elsewhere; there is consequently no tremor or vibration beyond the very least.

Turning-bridges, or bridges in which the two central spans rest upon a pivot built on a pier in the river, are very common. The bridge opens to let a vessel go by, and can then be closed again. The cantilever bridge is another form of this. Here two gigantic brackets, one on each shore, reach over a stream toward each other, and their union forms a continuous roadway. Between the one bracket and the other there is considerable space, another span being thrown over this, secured on one of the sides, but resting on rollers on the other side, thus allowing for contraction and expansion. The weight is laid upon the two piles of masonry, there being a counter-balance on the side away from the water.

The facility with which American bridge builders respond to specifications for bridges has led to important foreign orders, and it has been found that their structures meet the requirements. Many American bridges are therefore exported, and nowhere in the world can requirements of this kind be better or more quickly met than in the United States.



# Government Intelligence.

## Departmental and Miscellaneous.

THE TREASURY STATEMENT—SOUTHERN DEVELOPMENT—POSTAL CONVENTION WITH MEXICO—CANADIAN MATTERS—NICARAGUA CANAL—ARBITRATION BETWEEN VENEZUELA AND GREAT BRITAIN—MELBOURNE EXHIBITION—JAPANESE EDUCATION—PASSPORTS FOR CUBA—PUBLIC LAND GRANTS—NORTH POLE EXPEDITION—CONSULAR APPOINTMENTS—NAVAL NEWS.

JUNE 30 was the end of the government's fiscal year. Such a day is always a busy one in the government departments, particularly in the Treasury Department, where the vast financial affairs are straightened out and the books put in good shape for the coming year. The new fiscal year opens smoothly, though to some there appears a cloud on the horizon in the shape of the fast-increasing surplus. This fear seems justified to a certain extent when it is known that the receipts for the year just past were much larger than the previous year, with a prospect of an increase for each month of the new fiscal year swelling in all probability to forty or fifty million before next winter. The increase for the month of June was \$16,416,810.43. Should such rapid increase continue it can be readily understood that there is likely to be financial trouble unless some remedy is provided to avert it. The officials of the Treasury Department talk hopefully and their figures should do much to encourage the timid and doubting.

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The following is the authorized statement of the Treasury Department: The estimated receipts and expenditures of the government in the months of July and August show that there will be a decrease rather than an increase of the Treasury surplus during that time. After providing for the \$19,716,000 of 3 per cent. bonds, due July 1, the surplus will be about \$37,000,000. The pension appropriation of \$76,075,000 for the fiscal year ending June 30, 1887, is already exhausted, consequently the Pension Bureau reports that when the new appropriation becomes available on July 1, it will draw \$12,000,000 for the payment of the pensions. This will leave in the Treasury a surplus of \$25,000,000. The government assets in national bank depositaries on July 1 will about equal that sum, so that substantially the whole government balance will thus be available for the current business of the country on July 1, and will probably continue thus available for some months, for the amount of the government deposits in national banks constantly increases, and in August another \$12,000,000 will be drawn for pensions. Accruing interest and ordinary expenses will require \$37,000,000 in July and August, and the receipts for those months will be about \$65,000,000, leaving on September 1 a surplus less than on July 1, say \$36,000,000.

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Other considerations should be noticed as affecting the influence of the Treasury upon the finances of the country. One is that, of the above estimated receipts, more than \$1,000,000 will come, not from taxation, but from the profit on the coinage of the silver dollar. Another is that during July and August the government will expend at least \$4,000,000 in the purchase of silver bullion, which sum is not included in the above estimated expenditures. Another is that \$7,000,000 of the surplus is got by calling cash that amount of trade dollars redeemed and melted into bars. Last year the Treasury surplus in July and August ranged from \$75,000,000 to \$85,000,000, as against from \$18,000,000 to \$29,000,000 of this year, when a comparison is made upon the same basis, while the deposits in national bank depositaries are much larger. During the fiscal year ending June 30, 1887, the circulating medium of the country will have been increased through Treasury operations and otherwise about \$70,000,000, of which \$55,000,000 is in notes and coins of \$20 and under. The total reduction of the public debt for the fiscal year just ended is about \$109,300,000.

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Notwithstanding the hopeful talk of Secretary Fairchild and his assurances that he can relieve the tightened condition of financial affairs till December, there are not wanting those who call upon the President to convene an extra session of Congress for the purpose of

staving off the panic which they believe is just ahead unless legislation is had to prevent it. However, the chances for an extra session in October are lessening, and at present it is not generally believed that the Fiftieth Congress will come together before the legally appointed time in December. Aside from any special work which might be down with reference to finance, it cannot be disputed that Congress could do much in the way of necessary (general) legislation during October and November, thus avoiding the long delay in such matters, with a tedious session oftentimes far into the summer months.

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While directing attention to the financial condition and the uncertain money prospects of the government, it may be worth while to take notice of the sure prosperity and rapid development of the South. The manufactories and industries of that section steadily increase. The *Manufacturers' Record*, of Baltimore, which collects much valuable information on this subject, recently gave a semi-annual review of new enterprises. For the last six months 1,885 new industries have been established, against 822 for the same period last year. The money invested in these establishments is \$161,192,000, as against \$63,618,200 for the first six months of 1886. While all sorts of enterprises are shown, the largest in number are flour mills, cotton mills, lumber mills, machine shops, mining enterprises, iron furnaces, carriage and wagon factories, canning factories, electric light and furniture manufactories. In the States of Tennessee, Alabama, Arkansas, Kentucky, Virginia, Texas, Georgia and Maryland much activity is shown, with Alabama and Tennessee leading the other States. The great State of Texas is being rapidly developed and offers many inducements to immigration. Such a condition of affairs is a subject for congratulation to the entire country and "points the way" to larger prosperity and richer blessings for the peaceful, energetic, thrifty people of this great nation.

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The new postal convention between the United States and Mexico, which has already been referred to and which has just gone into effect, is attracting much attention from the commercial world. The convention was made on the 4th of April and signed by Postmaster-General Vilas and Mexican Minister Romero. It may be annulled at any time by mutual consent, or by six months' notice from either government. It obtains its interest from the fact that it is more in the nature of a commercial treaty than a postal-service schedule. The newspaper and letter postage rates are the same between the two countries as between the States of the United States. The most important change is in the rate of postage. Under the old treaty of the postal union convention business has been transacted heretofore. Now, registered pouches will go through direct to Mexico. Mexicans can now write to American merchants in any part of the Union for such articles (not exceeding four pounds in weight) which they desire, and have them sent direct by mail. It is well known that a large part of trade between the States in this country is done by mail, such as shoes, gloves, cigars and lighter material, and in the same manner citizens of Mexico are brought into business intercourse with the merchants of this country. While such trade will be subject to the collection of customs duties in Mexico, which have not yet been perfected, it is believed that a large retail trade will be produced by the treaty between the two countries.

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From some recent statistics it is shown that while our trade with Mexico in recent years has been largely in merchandise, the traffic in precious metals has been greater. The following table shows imports of gold and silver bars for the past ten years:

1877.....	\$10,240,319	1882.....	\$6,631,938
1878.....	8,394,146	1883.....	9,782,936
1879.....	8,554,598	1884.....	13,015,901
1880.....	9,115,824	1885.....	14,919,611
1881.....	9,736,324	1886.....	15,935,396

The value of merchandise sent from Mexico in 1886 amounted to \$10,687,972, against \$5,204,264 in 1877, while our merchandise exported in 1886 amounted to \$7,737,623, against \$5,893,494 in 1877. This country buys from Mexico 80 per cent. of all the merchandise it sends abroad and sells 33 per cent. of all that it buys. The commercial relations of Mexico with the United States are larger than with any other nation.

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At the State Department it is learned that Mexican states have been



imposing a duty upon American goods coming within their jurisdiction after the general government has already collected a duty upon the same articles upon first entry into the country. The right to impose this additional duty has never been the subject of correspondence between the two countries, nor has it been officially considered, although presented to the department for solution by several United States consuls. If American merchants are to be subject to irregular taxation and double duties by all the Mexican states, at pleasure, it will, without doubt, prove a serious obstacle in the way of trade, and in view of the new postal treaty it is hoped the question may soon be settled.

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Although Congressman Butterworth, of Ohio, is doing his level best to get some opinion from the Canadians as to a healthy commercial union of trade and a profitable settlement of the fishery question, and notwithstanding the bright prospects mentioned some time ago of a happy solution of this vexed question, nothing as yet has come to the surface that is encouraging or satisfactory. Nothing has emanated from the State Department, nor has Lord Salisbury sent us a single kind word, so the whole business is yet in a tangle and no one is wise enough to tell whether it shall be non-intercourse or liberal reciprocity.

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It is reported that the Galena has sailed from Boston for the Canadian fishing-grounds and that she will proceed directly to Halifax, N. S., and after taking coal will visit the American fishing fleet in the Bay of Fundy. The Galena will also call at Montreal and Quebec on her trip. The flagship Richmond will also sail to Portland, Halifax and Quebec. Perhaps this may be only a feint to show the wild Canadians what big guns and fine ships we have and possibly scare them into good behavior. Mr. Foster, the Canadian Minister of Marine, is quoted as saying: The American fishermen know the extent of their privileges, and, being aware that the law will be enforced, are consequently very careful not to expose themselves to the risk of seizure. Americans do not expect to secure supplies and bait in Canada, and do not therefore consider a refusal of these articles as harsh treatment. In all cases of distress, storms and sickness, whatever supplies are needed are cheerfully granted.

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It is understood that those interested in the Nicaragua Canal scheme are setting to work vigorously to push that enterprise through to completion. A liberal concession from the Nicaraguan Government has just been obtained. The guarantee payments stipulated have been made and there are plenty of funds in hand to meet the preliminary expenses of locating route, &c. Large parties of engineers will soon be set to work, and the construction will begin very soon after. Rear-Admiral Ammen, a retired officer of the United States Navy, is an enthusiast in this work and has given much valuable time and talent to the plan.

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The Department of State is informed, through United States Minister Curry at Madrid, that the commercial arrangement between the United States and Spain, by which equality of treatment of American and Spanish vessels was secured in the ports of Cuba and Porto Rico, is extended till the 31st of December next. Certain importers in New York have been uneasy with the fear that this privilege would expire on the 30th of June.

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Señor Olavarria, the new Venezuelan Minister, is now in Washington, it is said, for the purpose of securing the United States Government as an arbitrator in settling the old dispute between Venezuela and England, growing out of the seizure by the latter of certain lands in Dutch Guiana. It seems that England, with that persistent aggrandizement for which she is noted, has taken territory which does not belong to her. As far back as 1805 England acquired from Holland certain lands along the Essequibo river. Since that time an English engineer, sent out by his government to run boundary lines, carefully drew them so as to scoop in valuable gold mines and a whole island belonging to the Venezuelan Government. In 1850 it was agreed that both countries should stay out of the disputed territory, but it seems that within the past year the English Government has taken almost complete possession of it.

The British Minister at Washington has extended, through the State Department, an invitation to this government to take part in the Centennial International Exhibition, to be held at Melbourne, Australia, in 1888, to celebrate the centenary of the founding of the first Australian colony, in New South Wales. The exhibition is to be opened on the first day of August, 1888, and will continue for six months. Ample space will be given American exhibitors, without charge.

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Secretary Fairchild has requested the Secretary of State to instruct the United States consul at Honolulu that the usual consular invoice is regarded as sufficient in the case of goods shipped to the United States which are entitled to free entry under our tariff. Two such declarations have heretofore been demanded, for which the sum of \$4.50 was charged. Hereafter one fee of \$2 will only be required of shippers.

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The sharp and energetic Japanese have been learning some Yankee tricks, to the disadvantage of the Yankee. The study of English is compulsory in the progressive little island of the Mikado, and for that reason, for some time past, the American bookseller has been reaping quite a harvest from the sale of school-books to the numerous "little maids from school." Such a state of things did not suit the Lord High Executioner, so after consultation with the Pooh-Bahs of his bailiwick he has been able to "execute" text-books equal to those formerly bought. In fact, they are such clever reprints of the American editions that the booksellers of the United States cannot sell a book to the most ignorant Japanese.

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The Department of State has received information from the consul at Barcelona, Spain, that the opening of the Universal Exhibition to be held in that city has been postponed to April 8, 1888.

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The Spanish Minister at Washington has informed the Secretary of State that foreigners visiting Cuba who contemplate remaining longer than one month must provide themselves with passports. Recalling the recent narrow escape from kidnapping which Senator John Sherman experienced while down in Cuba, other distinguished statesmen going in that direction should promptly provide themselves with a government label of character, business and market value.

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Assistant-Secretary Maynard has granted the application of the Mechanics' Institute, of San Francisco, to exhibit without payment of dues foreign goods intended for the coming exhibition to be held by the institute, subject to the conditions usually prescribed in such cases, one of which is that the exposition building be bonded as a warehouse of Class 3.

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The Treasury Department is informed that printed cigar and cigarette labels are being imported at Key West, Fla., with the evident intention of deceiving the trade by placing them on boxes of domestic cigars and cigarettes, and thereby impressing the purchaser with the idea that the goods so labelled are "genuine smuggled goods." The collector asks if it is not his duty to destroy them. He has been informed in reply that there does not appear to be any authority for the course suggested, and that such destruction does not seem to be demanded in the interests of the revenue, since similar labels produced in the United States may just as well be used for the purpose stated.

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The Northern Pacific Railroad has answered the rule of Secretary Lamar against certain land-grant railroads to show cause on or before June 27, 1887, why the several orders of withdrawal from settlement of the lands within their indemnity limits should not be revoked, and the lands embraced therein restored to settlement. In its answer the company sets forth that "it has thus far promptly asserted its rights to the lands within its indemnity limits, to the extent that the action of the government and the land department will permit; that it can go no further until the government surveys the remaining granted and indemnity lands, and no faster than those surveys progress, and that until the completion of the surveys of the sections in the granted limits, and the adjudication of the rights of the company thereto,



neither the company nor your department can definitely determine to what extent it is entitled to land within the indemnity limits."

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A novel method of exploring the regions around the North Pole has just been presented to some of the government officials. The gentleman who proposes the method is an inventor, of Chicago, and his plan is about as follows: He will start an air-ship of his own construction, so fashioned as to accommodate numerous guests—say, two hundred—and so powerful in machinery as to be able to sail along at the rate of seventy miles an hour. He will start on June 1 of next year by a pleasant route, mapped along the pathway of the stars. His air-ship is to be propelled by what he terms a new method, known as the "partial vacuum." Eminent scientists who have examined the plan fully agreed on the "partial vacuum" of the inventor.

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Few appointments have been made since last issue. Some are as follows: In the consular and diplomatic service, Vincent Lamantia, of Louisiana, United States consul at Catania, Italy; James S. Benedict, of District of Columbia, to be United States consul at Stratford, Ontario; James H. Smith, of District of Columbia, at Mayence, Germany, and D. M. White, of New Hampshire, to be United States consul at Sherbrooke, Canada.

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The President has recognized Arnold Kummer as consul of Belgium at Baltimore for the States of Maryland and Delaware, and Julio Gonzales, consul for United States, of Venezuela, at San Francisco, Cal.

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Commodore Bancroft Gherardi and Capt. George Brown have passed their examinations for promotion—the former to be rear admiral and the latter to be commodore in the Navy. The promotions to not go into effect, however, immediately. Admiral Franklin will retire on the 4th of August and will be succeeded by Commodore Gherardi, and Admiral Davis retires September 3 and will be succeeded by Commodore Braine. These promotions will cause the promotion of Captain Brown to be commodore. Capt. John G. Walker and Commander W. S. Schley passed their examinations for promotion, the former to be commodore and the latter to be captain. Both officers are bureau chiefs of the Navy Department, with the relative rank of commodore.

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The Navy Department is informed of the arrival of the United States steamship *Pinta* at Juneu, on her way to Mangel. The United States steamship *Vandalia* arrived at Callao, Peru, on June 27. Under date of June 2 Admiral Chandler reports the Brooklyn, Monocacy, Omaha and Palos at Yokohama, the Essex en route from Kobe to Yokohama, and the Marion at Chemulpo, Corea.

M.

### German Colonization.

CONSUL-GENERAL RAINE.

IT is a noticeable fact that German official statistics furnish no classification of the occupations of emigrants. Nor can a comparison be made with our own emigration statistics, as the latter are published for the fiscal year, while German statistics are based upon figures for the calendar year. The discrepancy in the numbers of emigrants to the United States between the statistics of the United States and Germany is explained by the fact that the statistical bureau of the German Empire has control only over figures gathered in German ports since 1872, and also uses French sources in Havre, but has no control over the number of German emigrants embarking at Dutch and English ports, though it may be conceded that a considerable number of Germans emigrating by way of the latter ports go to the United States.

From the above it appears that our returns, generally, state the number of German immigrants higher than German returns, which show that the number of German emigrants via German ports and the Belgian port of Antwerp, for the fifteen years from 1871 to 1885, amounted to 1,412,914.

To this number of emigrants must be added the number of German emigrants embarking at Havre. But in this case the country of destination cannot be given. The total number of emigrants would be 1,478,887.

The causes for emigration represent peculiar features. Roscher has condensed them as follows: Surplus population, surplus capital, sur-

plus of educated men not available; finally, a certain political or religious discontent, hence disproportional relations to society (family, state, church and property).

The incomparably rapid increase of the United States in population, wealth and political power, which, since half a century, has raised them to the rank of the first nation of the globe, exercised, of course, a great attractive power, with their enormous extent of untilled, fertile soil, a quick and clever utilization of modern traffic facilities and the expediency of their political institutions, warranting to everyone the necessary security for his person and property and fair play to develop his individual faculties.

Religious dissension is also one of the causes of emigration, as it was at the time of the Pilgrims, who first settled in our now so prosperous New England States, and two hundred years ago, when the Huguenots sought new homes in England, Ireland and Prussia (then an electorate, Brandenburg), where, especially in the latter country, they became the founders of silk and other now thriving industries.

Complaints are raised that the stream of emigrants was not in proper times systematically directed to countries where they could have remained Germans and have become consumers and not producers of German commodities.

The colonial policy adopted in recent time is therefore intended to make up for the alleged loss hitherto sustained. As a rule, leading German circles are no longer in favor of Germans emigrating to the United States and Canada. To what extent and by what influences emigration in the last five years was checked can hardly be stated. In 1885 the number of emigrants was 103,642, as against 210,547 in 1881.

The eastern provinces of Prussia and Posen, especially in districts where there is a mixed population (Polish and German), showed not only the highest number of emigrants and thinnest population, but also the lowest degree of industry and worst condition of farming, though they have a more fertile soil than many other provinces. The circumstance that the percentage of Germans, as compared with Poles, diminished constantly attracted the attention of the authorities, and it was finally found that the impossibility of many sons of German farmers, &c., considering the many large manorial estates, to get an independent husbandry and homestead drove many valuable elements away, leaving behind a not desirable class of people.

Now, recently Prussian legislative bodies have passed a law appropriating 100,000,000 marks for a colonization of those provinces by Germans. Large manorial estates shall be purchased and dismembered to be prepared for husbandries of fit and able small farmers to carry on a systematic and paying farming.

Great efforts have of late been made by German colonial and other associations to give the stream of German emigrants another direction than to the United States, where they say German nationality and language are easily lost in the intercourse with a kindred tribe and idiom. Great hopes are therefore entertained with regard to the three Southern states, Brazil, Uruguay and Paraguay, having vast fertile districts with a population next to nothing, situated under a temperately warm sun. The opinions of scientific explorers and practical men have confirmed that, from the nature of agricultural produce obtained there, these states, as well as Argentine, would not, like North America, serve to make German immigrants formidable competitors in the production of breadstuffs, while, by and by, they would become valuable customers for German manufactures.

It is also claimed that the natives of South Brazil, with their idiom, their manners, and customs are more foreign to German immigrants than the United States, retarding amalgamation with the native element. To prove this, attention is directed to the development of three Brazilian provinces, Rio Grande do Sul, Parana, and Santa Catharina. About 200,000 Germans have settled here, steadily increasing in number, both by births and new immigrants from Germany, but retaining their German language and manners in church and school.

German colonies have as yet, except perhaps the acquisitions in the South Sea (New Guinea, &c.), not been deemed proper fields for German farmers; but as purveyors of raw material and colonial and such goods as are not produced in Germany, they are likely to prove before long an important factor in extending German trade, and in giving employment to many thousands of persons in the lines of navigation, commerce and industry.



## Engineering and Machinery.

### Double-Cylinder Endless Bed or Farrar Surfacer.

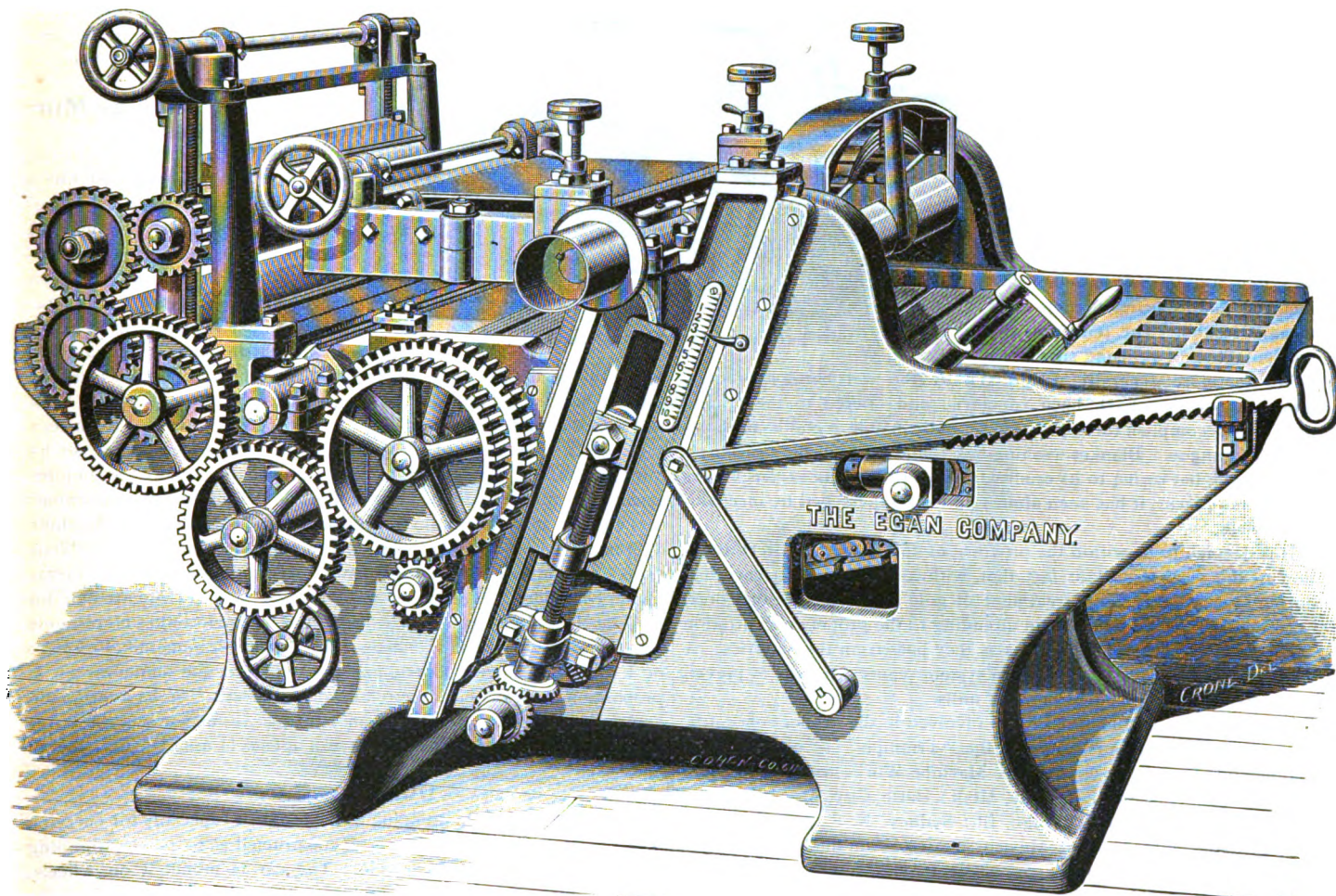
**A**N illustration of an improved double surfacer, with cylinder to raise and lower, and with a pair of feeding-out rolls for the lower cylinder, is given herewith. The frame is of new design, and is made in such a way that it is stronger for its weight than any other machine, as it is braced and ribbed on the inside, which makes it very stiff and solid, and is so arranged that the working parts are all easily got at. The main cylinder raises and lowers by a crank from the working end of the machine. This cylinder is double belted, and the lips are of the very best cast steel and are brought up in such a manner that the knives hug them very firmly. The lower cylinder is on a

ing mills, large furniture factories, car and railway shops and all parties having large quantities of wood to dress on either one or both sides. The loose and tight pulleys are 14 inches in diameter and  $8\frac{1}{2}$  inches face, and should run 800 revolutions per minute.

For further information and prices of this, or cuts and prices of any other improved wood-working machinery, address the Egan Company.

### Rice-Hulling Machine.

**A** NEW machine for hulling rice consists of a mill designed to receive the rice as it comes continuously from the threshing machine, and separate the grains or kernels of rice from the hulls. It is provided with a central operating shaft which is hollow, and as the rice is fed down the hopper it is carried along the inside of this shaft



DOUBLE-CYLINDER ENDLESS BED OR FARRAR SURFACER.

standard bed and has an independent adjustment for a heavy or light cut. The feed on this machine is very powerful, and the board is fed entirely through without the aid of the operator. The feeding rolls for feeding out the board are geared in the most superior manner and make a very powerful feed, which takes the board entirely through the machine. This will be found a great convenience. The pressure rolls are firmly weighted and hold the board solidly on a traveling-bed. The bed-frame being stationary, the slats are gibbed in the most improved manner, so that by no possible means can the ends of them be thrown into the cylinder. The broken roll is a great improvement and works on an improved principle. Two boards of uneven thickness can be fed through the machine at the same time. The capacity of the machine is said to be extraordinary for first-class planing in either hard or soft wood.

The makers build two sizes of this machine—No. 1 to plane 26 inches wide and 10 inches thick, and No. 2 to plane 30 inches wide and 10 inches thick, and can furnish them either with or without feeding-out rolls. They recommend this machine very highly for first-class plan-

ing by a spirally flanged conveyor, and delivered in the centre of the casing at the opposite end of the shaft, the shaft carrying upon this end a disk with roughened surface. Just in front of this disk, and held at its edges by the flanges of the two sections of which the casing is made, is a flexible diaphragm, at the rear of which, and opening centrally into the chamber in which it is situated, is a tube connected with an air-pump operated by an eccentric on the main shaft, so that as the latter revolves and feeds the rice forward from the hopper, delivering it between the roughened disk and the diaphragm, there will be an air-pressure at the back of the latter. This diaphragm is intended to be sufficiently yielding to prevent the rice from being broken as it is caught between the roughened face of the disk and the diaphragm, by which the hulls are stripped from the kernels of the grain. A safety-valve in the top of the casing regulates the pressure by the tension of a spring. There is also mounted upon the shaft a pulley which drives a fan, the blast from which is delivered in front of an opening near the bottom of the casing, out of which the rice and hulls fall when the mill is in operation, the hulls being thus blown off.



### Concentration of Ores.

THE mechanical concentration of ores is based entirely on the differences of the specific gravity of their component parts, and one of the most important points to be considered and accomplished in the treatment of gold and other ores is the proper separation of the valuable metals from their accompanying gangue, whatever difference of specific gravity may exist.

Opinions differ, even among the most intelligent mining men, in regard to the process and the style of machines best adapted to accomplish this separation, and whether air or water is the best medium to produce such separation or concentration, as it will be readily comprehended that it cannot be effected except through the agency of some fluid medium which offers resistance to the force of gravity. The dry crushing of gold or silver ores does not find general favor with mining and mill men. The most potent means which have precluded its general adoption have been the cost of the outlay for the requisite plant; the expensive necessity of drying the ore masses, perhaps roasting them previous to their concentrating treatment; the greater intelligence and educated skill required to manipulate the ores in the several stages of the process; the limited amount of ore which can be concentrated within a given time, and the consequent extreme cost incurred in producing perhaps only meagre results. The reduction and amalgamation of gold and silver ores being therefore generally undertaken by the wet battery process, numerous devices have been conceived and offered to the mining public to accomplish the separation of the valuable metallic particles from the gangue. Blanket-washing has found favor in the concentration of gold, but owing to its crudity, its uncertainty, its expensiveness and its sloppiness, it has been almost entirely superseded by mechanical devices.

It is deemed to be within the province of this article to direct attention to the very important fact that, with all of the experience had during twenty years in the treatment of gold and silver or other ores, even now a gross laxity exists in attending to the proper concentration of the metallic particles of the ores as they pass from the batteries. A happy-go-lucky, catch-what-you-can system seems generally to prevail in nearly all gold and silver or other mills.

With this view of the proposition involved in the proper concentration of ores, attention is called to the "Triumph" ore concentrators manufactured by the Joshua Hendy Machine Works and sold by them and their agents in Salt Lake City, Utah; Butte City, Mon.; Denver, Col.; Jersey City, N. J.; Chicago, Ill.; Sydney, N. S. W.; Auckland, New Zealand, and the city of Mexico, Mexico. And the manufacturers state that the "Triumph" ore concentrators possess many advantages. These consist in the superior features which enter into their construction and facilitate their operation. They are constructed in the best manner; their frames are of iron, insuring their solidity, durability and perfect steadiness of motion when operated; they are built as compactly as required strength will permit, weigh less, require less freight space in boxes, by which their cost of transportation is reduced, and occupy less mill room when set up than other machines of the same class.

The endless belt is carried upon a supplementary frame, which is mounted upon springs. The reciprocating movement which is imparted to this supplementary frame and belt tends to settle and retain the sulphurets and heavy and valuable metallic particles upon the belt until they are discharged at the proper moment. This peculiar movement is of the utmost importance, and enables these machines to perform more work than other vanners or concentrators. The rolls supporting the belt are of galvanized metal, which will neither warp, crack nor rust. The feeding mechanism is perfect, and permits the travel of the belt to be varied at will to any desired speed. The belts are of an improved form and manufactured especially for this purpose, of rubber, and very durable.

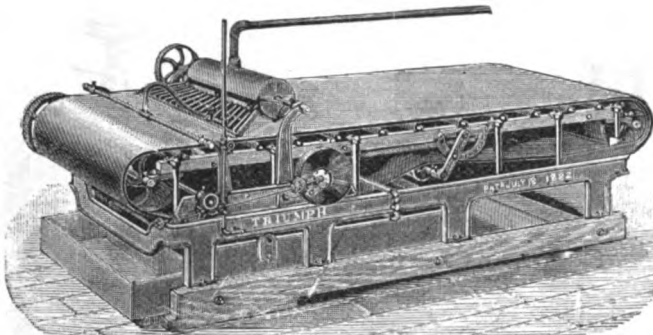
Three of the "Triumph" concentrators will suffice to take the

delivery of pulp from, and to thoroughly concentrate the sulphurets and valuable metallic particles from two batteries of five stamps each, say ten stamps; when the percentage of sulphurets and metallic particles does not exceed 3 per cent. of the gangue matter, six for a twenty and twelve for a forty stamp gold-quartz mill. A larger percentage of sulphurets and metallic particles will, of course, require a larger number of concentrators to insure perfect concentration.

The weight of the machine (boxed) is 2,270 pounds; weight of belt (included in above), 220 pounds; weight of heaviest part of machine, 80 pounds.

For uniform and close concentration the speed of the driving pulley of each machine should be adjusted and maintained at 230 revolutions per minute, or as nearly as possible. The size of driving pulley on concentrators is nine and three-quarter inches diameter and three inches face (tight or loose). The power required for driving each

machine has been carefully determined by an indicator to be less than one-half of one horse-power.



"TRIUMPH" ORE CONCENTRATORS.

los valiosos metales de la ganga que los acompaña, por más grande que sea la diferencia de pesantez específica que haya. Están en boga dos métodos de separación distintos, el procedimiento por la vía seca y el por la húmeda. El último es el que más generalmente se ha adoptado y uno de los concentradores que han dado los mejores resultados por la vía húmeda es el llamado "Triunfo," que ilustramos y el cual es manufacturado en el taller de Joshua Hendy Machine Works cuyo anuncio se halla en otra columna de este número. Tiene armazón de hierro y está sólidamente construido en todas las piezas que lo componen. Tres de su clase recojen la pasta que arrojan dos baterías de á cinco trituradores cada cual, concentrando enteramente los sulfuros y partículas metálicas. En cuanto se aumente el número de los bocartes ó trituradores, hay por supuesto que aumentar en la proporción indicada el número de concentradores. Se ha averiguado ascertadamente que la fuerza motriz que se necesita para hacer junctionar una de esas máquinas alcanza apenas la mitad de un caballo.

### Dumping Car.

AN improvement in dumping cars, designed especially for carrying coal, coke, gravel, &c., is so constructed as to permit dumping of the entire load on either side. The car is mounted on wheels, which support the body by suitable framework. The body is composed of ends and sides which are hinged at their upper edges to side rods that connect the ends. The lower edges of the sides or doors are curved inward, so that they unite when both are closed, thereby forming a tight receptacle with a rounded bottom; or the same result may be obtained by using straight sides, closing together to form a V. Beneath the body and fixed to the framework are slide boards, placed to form a double incline, the apex of which is at the centre, where the sides come together, and these inclines extend out far enough to carry the material beyond the wheels and track. For retaining the sides closed, they are provided with pivoted bars that engage notched pieces attached on the ends of the car. By this construction and arrangement either door or side can be opened for releasing the load, and the entire load will be discharged when one door is opened at either side, which is often a great convenience, and if it is desired to divide the load both sides can be released simultaneously. The shape of the body is such that the pressure on the sides will throw them open as soon as the latches are released. This car is said to be strong, simple and durable, easily operated, and never flying off the track while dumping. Its principle is applicable to any dumping vehicle as well as railroad car.



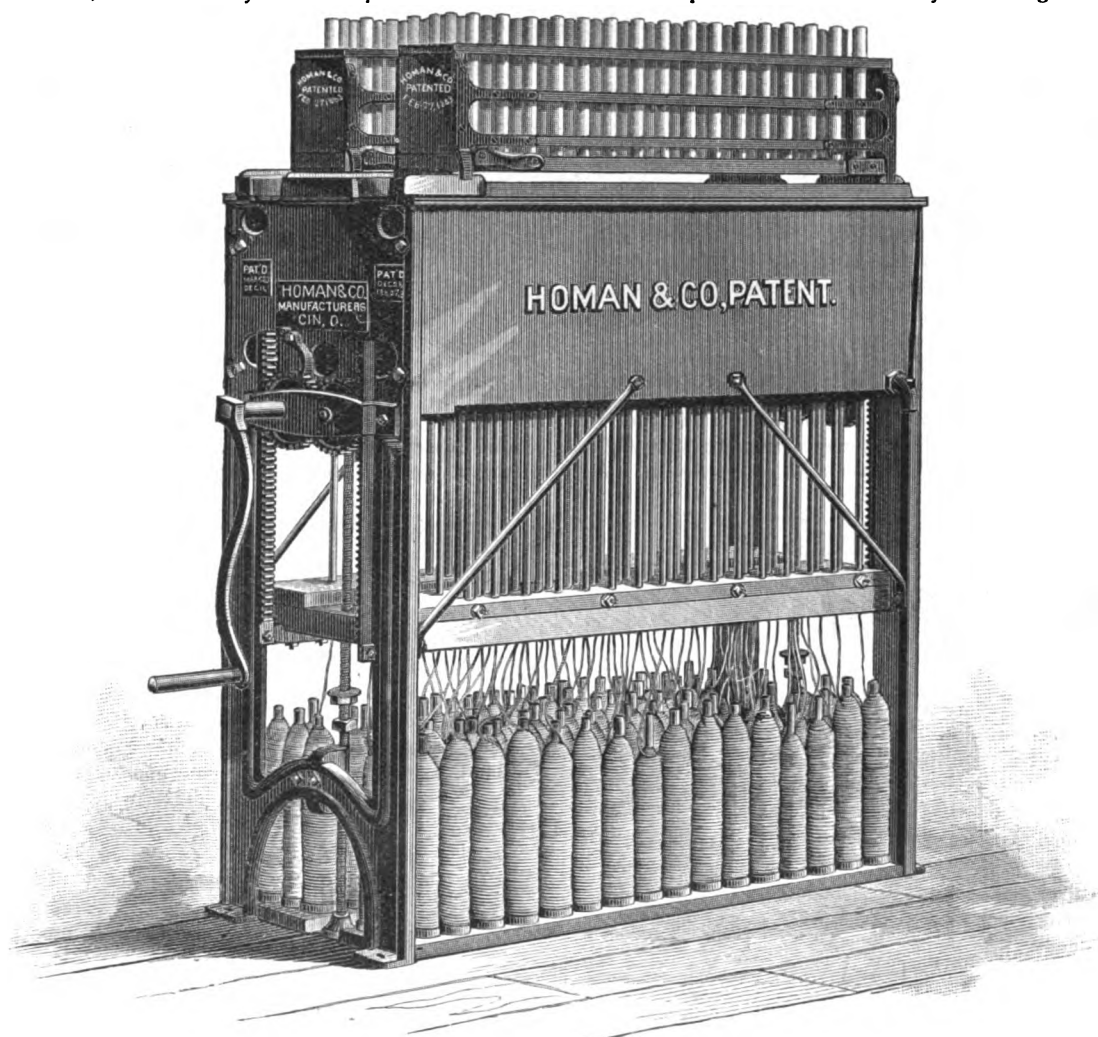
### Candle-Molding Machine.

THE candle-molding machine illustrated on this page is provided with an improved patent rack and gauge. The recent improvements in this machine are said to make it the most perfect of its class. An adjustable catch on the rack permits of greater ease and dexterity in operation, and the gauge can be set and adjusted to the smallest part of an inch and without any delay. The machine cuts the candles to the required length without waste. Machines can be ordered of any kind or desired size for paraffine, stearine or tallow candles, from the smallest Christmas candle to a large pound candle. This machine is made by Homan & Co., who have lately secured a patent for a com-

d'este periodico são os fabricantes d'estas machinas tão recomendaveis aos fabricantes de velas em geral, pois servem para fazer velas de qualquer tamanho por systema de fôrmas, entre ellas as de cêra desde as mais pequenas que se uzam nas festas do Natal até' as grandes de uma libra de peso que geralmente se empregam nas egrejas catholicas durante os serviços religiosos.

### Máquina de Amoldar Velas.

ILUSTRAMOS una máquina perfeccionada de amoldar velas con percha porta-velas y medida mejoradas, tales como las manufactura la Compañía Fabril de Homan y Cía. aseguran los fabricantes



CANDLE-MOLDING MACHINE.

bination candle-molding machine, which will produce two sizes of candles, each half of the machine operating on a different size. This saves the cost of a second machine, and is a desirable feature which will be appreciated by candle manufacturers. In sending orders purchasers must particularly designate the length and the diameter at both ends of the candle to be made. The same manufacturers also make machines for molding wax candles.

### Machina Para Fazer Velas.

A GRAVURA que illustra esta pagina, é copia fiel de uma machina aperfeiçoada, para fabricar velas por systema de fôrmas. Entre os muitos melhoramentos que apresenta, sobresahe o engenhoso aparelho de roda dentada provida de uma manivela por cujo meio simples e facil se faz subir ou baixar a peça que gradua o tamanho das velas. Este melhoramento, na opinião dos competentes na materia, torna esta machina, a mais perfeita n'este genero, que se conhece no mundo. Ella corta as velas dos tamanhos que se deseje sem desperdiçar material, fazendoas de qualquer comprimento sejam de paraffina, estearina, cêra, spermaceti ou cebo.

Os Sñrs Homan & Ca., cujo annuncio se encontra em outra pagina

de ella que es la única absolutamente perfecta bajo todos conceptos actualmente existente. Se construye de varios tamaños para la fabricacion de velas de paraffina, estearina y sebo. Si por casualidad se trata de fabricar para dias de fiesta velas de tamaño especial, los fabricantes están listos á procurar una máquina que produzca desde velillas de navidad hasta velas de tamaño mayor de una libra. Se sirven de esa máquina los principales veleros de los Estados Unidos.

### Flexible-Back Band-Saw for Metals.

THIS is a machine designed for use in machine-shops for cutting metals of all descriptions. The saw is specially tempered, the teeth being exceedingly hard, while the back is soft. The machine has an iron table 24 inches square, in which a slide is operated by a screw and hand-wheel; it carries the fence for gauging the angle of the cut. The machine can be adjusted to cut at any angle. The screw and hand-wheel are arranged so that they can be disconnected and the slide moved by hand. The saw-wheels have adjusting tension and are made adjustable to line up the saw with the table. The upper and lower saw-guides have hardened steel rolls. A brazing fixture is supplied with the machine.



## Hardware.

### "Richmond Star" Lawn Mower.

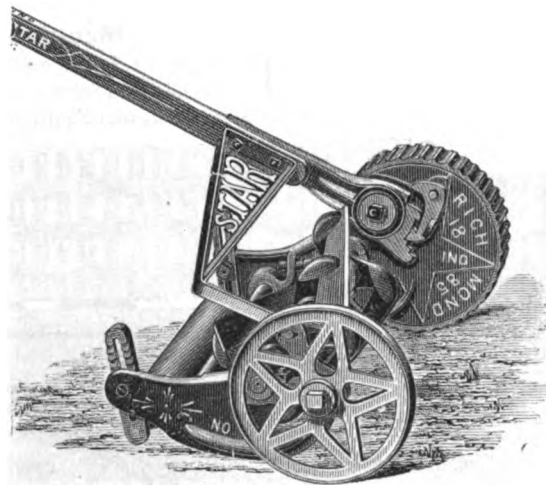
ILLUSTRATIONS are presented of the "Richmond Star" Lawn Mower, manufactured by the Dille & McGuire Manufacturing

Company, one of the cuts showing its operation on a slope. With this mower the cut grass is thrown to the rear and left, and out of the way. The features of this mower, succinctly stated, are as follows: The reel knives, which are made of the best spring steel, have a high speed; the rear cut and adjustable roller enable it to be used on uneven ground, to cut high or low, the adjustable and floating handle enable the operator to handle it as well down a terrace as on level ground; the drive wheel is so arranged, with the handle pivoted at a point on the frame, that it is impossible to slip the wheels when the mower is at work; the driving wheel can always run on the cut and not tread down the standing grass; the "Star" wheel being narrower the mower can be run close to walks, walls, fences and the foundations

of houses; the cutter bar is made of the best cast steel, and is so arranged with adjusting screws that it may always be kept in close contact with the revolving cutters; the mower may be turned upside

down when being moved from place to place; the small pinion is screwed on the cutter spindle, and cannot come off unless desired; the ratchet is noiseless, being operated by a series of inclines, making a positive clutch having no springs; the roller arms are so arranged that the mower may be raised or lowered, to regulate the height of the cut; the mower is self-sharpening, and can have the revolving cutter revolved backward without removing any part; this is effected by inserting the small end of a wrench into the hole made in the drive wheel so as to engage the gear; the handle is pivoted at the side of the driving wheel, where the power is both applied and generated, causing no side draft whatever, also allowing the

mower to be run under shrubbery. Cutting grass on a slope or embankment is work for which this mower is specially adapted, the operation being accomplished with ease, as shown in the larger illustration on this page. The "Richmond Star" is remarkable for its simplicity, lightness and effectiveness, and its value is attested by those who have used it.



"RICHMOND STAR" LAWN MOWER.



"RICHMOND STAR" LAWN MOWER IN OPERATION.

### Faucheuse de Pelouse Modèle "Richmond Star."

LES gravures ci-jointes donnent une idée claire de la faucheuse de pelouse modèle "Richmond Star" ainsi que de son fonctionnement. La commande est positive en même temps qu'elle est automatique et sans ressorts. Elle n'est pourvue que d'une seule roue motrice, laquelle glisse sur l'herbe fauchée sans abattre celle sur pied. Le manche est ajusté de façon qu'il facilite l'opération et la machine dans son ensemble est d'une extrême simplicité ainsi que d'une merveilleuse efficacité. Les lames sont du meilleur acier à ressort, les liens de fer malléable. La faucheuse dont il s'agit sort des ateliers de la compagnie manufacturière The Dille & McGuire Manufacturing Company.

—:—

### Cortadora de Césped Modelo "Richmond Star."

LOS adjuntos grabados ilustran la cortadora de césped modelo "Richmond Star" así como el modo de hacerla funcionar. El aparato motor de esa cortadora obra positivamente ade-

más de ser automático y sin que se necesiten resortes, tiene una sola rueda motriz la cual mientras está funcionando pasa sobre la yerba cortada sin abatir la en pie. El mango está ajustado de tal manera que facilite la operación y la máquina entera tal cual está es a la vez sencilla y eficaz. Las cuchillas son del mejor acero de resorte y las abrazaderas de hierro maleable. Las manufactura la compañía fabril The Dille & McGuire Manufacturing Company.

### "Richmond Star" Rasenmähmaschine.

BEIFOLGENDE Holzschnitte veranschaulichen die "Richmond Star" Rasenmähmaschine so wie die Art und Weise wie sie ihre Arbeit verrichtet. Die Triebkraft dieser Maschine ist positiv in ihrer Wirkung, selbstthätig und bedarf Keiner Federn. Sie besitzt nur ein Treibrad, welches in seiner Bewegung über das gemähte Gras hinfährt

ohne das stehende nieder zu biegen. Die Handhabe ist so angepasst, dass sie das gesamte Verfahren erleichtert und die Maschine so wie sie ist zeichnet sich durch Einfachheit und Wirksamkeit aus. Die Messer sind vom besten Federstahl und die Stützen aus hämmerbarem Eisen. Fabrikanten dieser Maschine sind die Dille & McGuire Manufacturing Company.

—:—

A CAN-OPENER lately put upon the market is provided with two cutting knives, one of which is to be

used in cutting a round opening and the other in making a square aperture. The first knife has a gauge by which it is adjusted to the diameter of the desired opening, thus adapting it to use with large or small cans, the shape of the knife being such that it lifts the part cut out and turns down the edge left on the can. This is a handy little article.



## Flour Machinery & Processes.

### Improvement in Milling.

ONE of the great questions among millers to-day is: Have we reached the limit of improvement? The answer is simple enough. We cannot expect to reach the limit of improvement until we stop inventing, because every invention means that a defect existed; at least, to the mind of the patentee. There are those who think that there is not a mill but could be improved in some particular, and while thought lasts and men's opinions differ changes of one kind or another will continue to take place. Take any one mill, no matter how well it may be fitted up according to the ideas of its owner, transfer it to another, and ten chances to one the new comer would see room for change, so that we must always expect modifications in both machinery and processes.

### Grades of Flour.

HIGH grades of flour seem to retain their standing in the household, and most consumers of wheaten flour demand a bread from the baker which only the higher grades can produce. The relative cheapness of low grades, as compared with the higher priced patents, fall short of the mark in the fact that the cheapest to the baker will be the cheapest to the consumer, for although it may be true that a patent will enable a baker to sell more water, it must be remembered that water is a measure of the amount of gluten the flour contains, and gluten is the article sought, containing, as it does, the chief nutritive constituents of the flour. It may be argued, therefore, that the miller who is behind the times in his machinery is not able to take advantage of everything falling in his way in the matter of choice of grades.

### The Hurford Flour Bolt.

THE Hurford flour bolt has been much improved of late. In this bolt the reel is formed of two or more sections, according to its length. The inside brush is so constructed as to avoid all liability of its filling up with flour. It is hung pivotally upon the reel shaft and weighted below, by which arrangement it swings with a vibrating motion as the reel revolves, and cleans the cloth on the upper inside of the reel. It is made adjustable, so as to be set more or less closely to the cloth. There has been also an outside brush added which is automatic in its operation, and works intermittently at longer or shorter intervals, at the will of the operator. By this arrangement the cloth is brushed only so much as may be necessary, thereby making a great saving in the wear of cloth. This intermitting action is produced by a cam and ratchet gear. The reel is composed of four segments in its circumference, and has only four longitudinal ribs. The cloth is fastened on the inside of the ribs, thus giving the inside of the reel a perfectly smooth surface.

It is claimed that by reason of this smooth surface, and the inside and outside brushes, by which the cloth is kept constantly clean, a very large capacity is obtained, together with unequaled results in all other respects.

### Millstone and Roller Grinding.

THERE are those in the older schools of milling who will say that the days of careful grinding are past, that they made their exit at the time when the better class of mills changed to the gradual-reduction system. In this they are mistaken. While it is true that the roller system admits of more carelessness in grinding, it is true that they also admit of more careful grinding than the millstones. The miller may set the rolls and leave them to themselves and they will do fairly good work, but they will do much better work if properly cared for and properly handled. In millstone grinding no one ever thinks of going off and leaving the millstones for an hour or two or three to themselves. They are constantly receiving attention and are being adjusted from time to time to suit the changes in the wheat, as the proportion of hard or soft grain changes, or as the changes in the temperature make corresponding changes in the character of the grain. These same conditions exist in a roller mill as they do in a stone mill,

and the same watchfulness is required in a roller mill that there is in a stone mill. No miller need change from a stone mill to a roller because he will not need to change his grinding so often, as he will find the same reasons for changing and examining his grinding in a roller mill that he does in a stone mill.—*Millstone.*

### Yields.

THIS important question, which affects the milling fraternity at large from a financial standpoint and quality of products, is one that has probably brought forth more discussion from millers than any other topic in milling, for upon this subject devolves, to a greater or less degree, the success of a mill. The long-system miller brings forth his ideas and claims, viewing them from a practical standpoint; the short-system miller advocates his opinions; also the much abused burr miller, and all toward one common end—that of getting the most high grades of flour and well-finished feed out of stated amounts of wheat. This subject of yields is a critical one to all engaged in milling, as many have found to their sorrow.

A certain mill may be using over and above the usual allowance of wheat for successful milling, viewed from a money-making standpoint, and yet realize no better prices than another mill in the same locality, which uses an allowance that by cleaning up thoroughly affords them a reasonable compensation for their goods. The money making of the first mill is slipping away through the feed bins. I have seen mills, duplicates of each other, where the grades of one gave universal satisfaction and finished reasonably close, while the other, equally as good a mill in every respect, made flour of an inferior quality and white, sharp feed.

An inferior mill oftentimes may do good work with a practical man at the helm, while a mill with the latest improved machinery will be a complete failure under a poor workman (as is often the case), who lets her run herself, while he looks out of the mill door, or engages in some other pursuit which attracts his attention from his business, and who labors under the impression that anybody can run a roller mill. Such a man usually does much theorizing, but little of that practical application which is the only means of attaining success. We find few mills, where their millers make them a study, whose yields are not satisfactory. But other causes may arise—bad wheat, lack of sufficient machinery for doing good work, oftentimes the fault of millwrights—these things call upon the miller in charge for changes which will insure better results and closer yields.

We often find mills whose proprietors insist on a closer yield, yet a trip through the mill shows a general leakage of spouts, elevators blowing, machines leaking and floors covered with a general mixture of mill products. They say, "We are finishing very close and yet the flour is not up to the standard." They wonder why it takes five bushels of wheat to make a barrel of flour, and why their balance sheet shows up on the wrong side of the ledger at the end of the year. They never think that a leak here and one there, with probably a careless or indifferent miller, are the true sources of their year's bad business, while if leakages were stopped, less flour left in their feed and leakages sent to their proper destination, flour and general results would be better.

Scourers are often a source of loss by the breaking of grains which go to screenings, where by proper adjustment much would be saved. There are so many sources for the slipping away, as it were, of mill products, that it requires constant watchfulness on the part of those in charge to prevent waste. A middlings roll may not be working close enough, and yet they console themselves with the thought that they will catch up on the B purifier, which is probably already overloaded, and so on through the various stages, culminating in sharp tailings and a large percentage of low-grade flour and rich feed. Whereas, by not letting this roll or that do its work properly, keeping products down at the commencement, and not letting all go to tail-end of mill, the yield would be better, grades of flour would give better satisfaction and feed be cleaner.

A practical man who secures permanent and satisfactory results looks carefully after his separations, and gets the best possible work out of his machinery and knows when these results are being accomplished. In conclusion I would say that yields are often shouldered onto the mill when they rightfully belong to those having charge.—*Harmar in American Miller.*



## Fancy Goods, Stationery & Paper

### Metal Novelties.

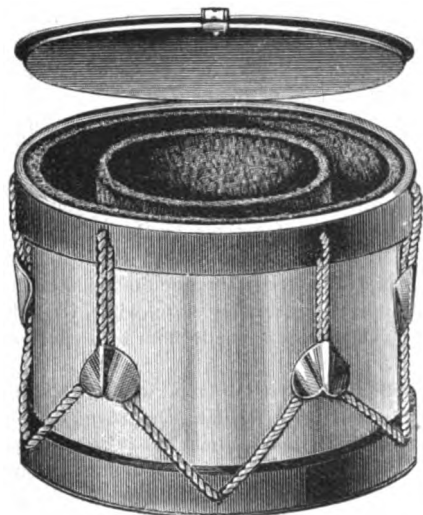
ILLUSTRATIONS of two metal novelties of a taking character are presented on this page. One is of a collar or cuff box, which is designed in two metals, silver and brass, and the details of the box are carried out in the most perfect and solid manner; the lining is of plush, and the box is finding great favor with the trade.

The other cut shows a very effective comb and brush holder, in metal and wood. The brush-holder is a good representation of a

justed to any length. There is also a thumb-screw at the joint of the legs, whereby they are held in any position desired. The compass is substantially made, is sold at an attractive price and is thoroughly effective. With the needle pushed in out of sight, the compass becomes a serviceable pencil-holder, and can be used to hold the pencil in the pocket.

### Progressive Game Board.

AN illustration on this page shows the design of a new game board called the "Progressive." This contains a combination of chess, checkers, backgammon and go-bang, and it can be utilized by

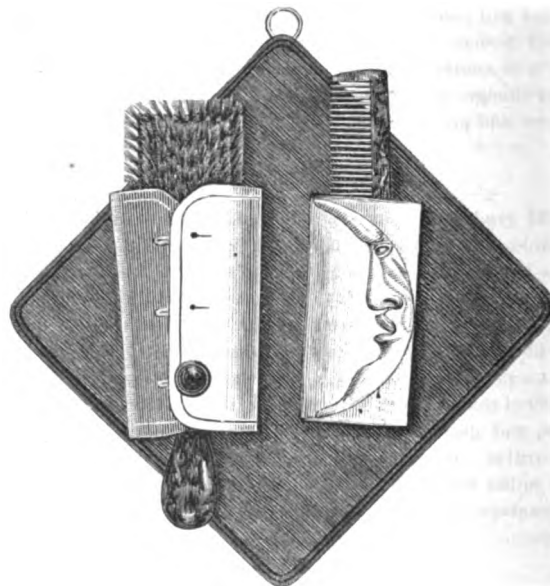


CUFF-BOX.

gentleman's linen cuff with jeweled buttons, and an envelope of the same metal, with a heavily embossed and grotesque figure of the face of the moon, forms the receptacle for the comb.

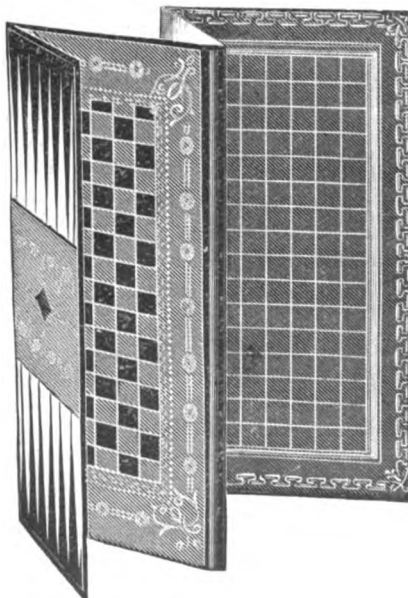
### Pencil Compass.

A NEW pencil compass, or dividers, is in the market. One leg of the compass is tube-shaped, open its entire length on one side, so that it can be increased or decreased in size in order that it may



BRUSH AND COMB HOLDER.

four players in two different games at one time without interfering with each other. The size of the board when opened is  $9\frac{1}{2} \times 38$  inches, and when closed  $9\frac{1}{2} \times 18\frac{1}{2}$  inches. The board is covered, front and back, with imitation leather, the cover being handsomely ornamented and embossed with figures; it is well bound, and the interior games are finished in bright colors. As shown by the illustration this combination board is compact and convenient for use at home and by travelers. A box containing checkers, dice, counters, dice



PROGRESSIVE GAME BOARD.

tightly clasp the pencil used. On each side of the opening is a scale, one side being in inches and the other in the metric divisions.

The other leg of the compass is a small tube, from the lower end of which protrudes a needle, which, by means of a thumb-screw, can be ad-

justed to any length. There is also a thumb-screw at the joint of the legs, whereby they are held in any position desired. The compass is substantially made, is sold at an attractive price and is thoroughly effective. With the needle pushed in out of sight, the compass becomes a serviceable pencil-holder, and can be used to hold the pencil in the pocket.

A NEW toilet and odor case is in the form of a miniature bureau, handsomely fitted up with all of the needed appliances.



## American Industries.

### The Manufacture of Cigarettes.

WILLIAM S. KIMBALL & Co., Rochester, N. Y., U. S. A.

THE words "Vanity Fair" once made people think of the writers who made them familiar terms; but Bunyan and Thackeray are eclipsed, and, although "Vanity Fair" is now more in the mouths and thoughts of the public, it is there in the form of the solacing weed which Raleigh introduced to the Caucasian race.

As best known to-day they refer to a favorite brand of smoking tobacco, made into an equally favorite brand of cigarettes by William S. Kimball & Co., Rochester, N. Y., U. S. A. This tobacco—a choice selection—was first offered to the trade in 1867, and six years afterward it was sufficiently perfected to reach the standard which the firm had set for it. Soon after this cigarette smoking became fashionable, and in January, 1876, the firm decided to commence the manufacture of tobacco in this shape. Nearly four months afterward, in April, the first Vanity Fair cigarettes were offered to the trade—they were the same size as those made now, but the packages were wrapped in red paper, the idea being to make a handsome package, and, at the same time, one which would attract attention. Since that time, eleven years ago, many improvements in the manufacture and packing have been introduced, though no radical changes have been made. The most notable among these improvements is the printing or water-marking of the name of the brand and of the manufacturer on each cigarette, and covering the ends of the packages so as to exclude any particle of dust or other deleterious substances which might reach the cigarettes while the boxes stand open in the dealer's cases. Although almost all cigarettes are now put up in this manner, William S. Kimball & Co. were the first to make the innovation which they did in 1878. About the same time they also introduced the Fragrant Vanity Fair cigarettes, to meet the demand for a mild smoke, which had suddenly sprung up and continues to this day.

Some idea may be had of the enormous growth of the cigarette business in this country by a comparison of the figures showing the number manufactured by this firm. In the nine months from April to December, 1876, there were made 12,000,000, while last year over 300,000,000 were made and sold, an increase of 250 per cent. in ten years.

The material used in the manufacture of the Vanity Fair tobacco and cigarettes is the best bright leaf grown in Virginia, and in point of delicacy, purity, and marked general superiority they are acknowledged to rank very high. The tobacco is free from harsh qualities, and does not bite the tongue or cause disagreeable sensations.

The factory in which the Vanity Fair tobacco and cigarettes are

made is one of the handsomest manufacturing establishments in this country. It occupies an entire square, and is built in the shape of a triangle, the dimensions of which are 218 feet on Court street, 176 feet on the canal, and 203 feet on the Genesee River. To this large building another has been added this spring.

The new building has a river frontage of 140 feet, making, with the present building, a river frontage of 340 feet. The plan of construction is somewhat irregular in shape, covering an area of about 17,000 square feet—the six stories, including the basement—thus giving a storage area of over 100,000 square feet. Tobacco is to be stored in

this building in large casks or hogsheads, weighing from 700 to 2,000 pounds each, thus requiring a strong interior construction of wrought-iron girders and cast-iron columns, based upon large piers starting from the bed rock, twenty-five feet below the surface. The main entrance to the building is from the courtyard. Near this entrance is located a large elevator, running from the basement to the fifth story. There is also an iron staircase connecting the different floors. Provision has also been made for extending the workrooms into a portion of this building, and a large dining-room will be

fitted up for the accommodation of 400 of the employees. The first three floors are built on a level with those of the older building and connected with them by suitable openings.

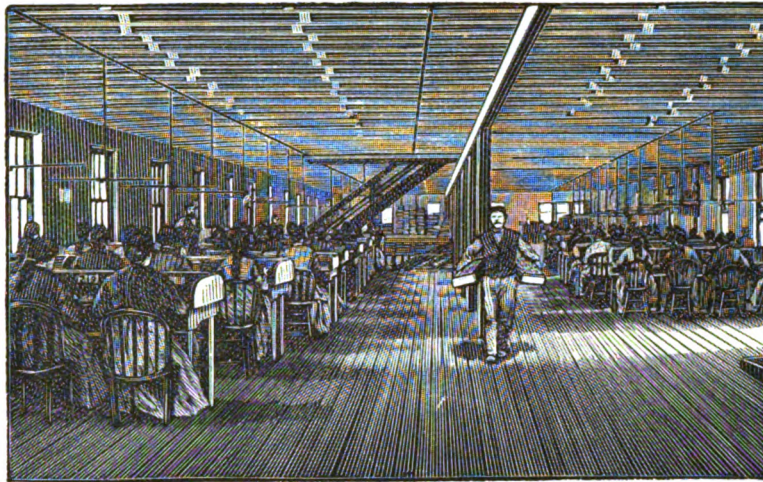
In designing the exterior of the building, the architects have sought to give by careful study a simple, but dignified and massive effect to the structure, features which are some of the characteristics of the improvement now apparent in architectural designs throughout the country.

The building is of brick, relieved by terra-cotta trimmings. Courses of Medina stone extend around the building, forming the caps and sills to the basement, first and second story windows. Over the second-story windows is a heavy belt cornice, above which are the remaining three tiers of windows, the upper row being finished with heavy, round arches, forming a continuous finish around the building. The cornice is of

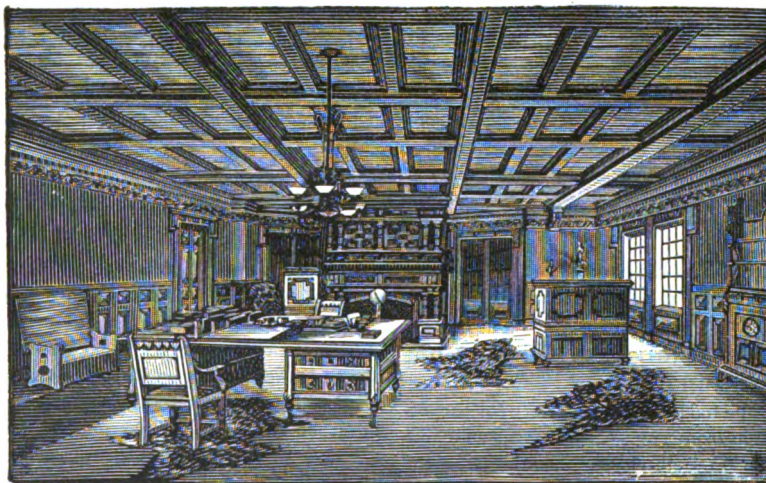
brick and terra cotta, ninety feet above the river bed, and surmounted by a paneled brick balustrade. The roof is of asphalt and gravel. At the northeast corner is a round tower, eighteen feet in diameter, its top being 127 feet above the river-bed.

The first illustration shows one room in the factory, with the girls at work rolling the "Vanity Fair" cigarettes. In making these and the other brands which the firm control over 900 girls are regularly employed. The second illustration presents a view of a private office occupied by Mr. Kimball and his partner, James C. Hart. This room is beautifully fitted up in solid oak, one of the prominent features being the large, old-fashioned open fire-place, with its mammoth oak mantel. On the floor are rugs made from the skins of wild animals, while ranged round the walls on easels and pedestals are many works of art.

It is not strange that with the energy which has been exerted in this department of manufacture, and with the care bestowed upon the



INTERIOR VIEW OF THE KIMBALL FACTORY—MAKING CIGARETTES.



INTERIOR VIEW OF THE KIMBALL FACTORY—PRIVATE OFFICE.



selection of material and the processes for converting that material into the form so acceptable to consumers of "the weed," the fame of William S. Kimball & Co. and of the "Vanity Fair" tobacco and cigarettes has become so extended. It may be truly said that the success which has attended this business is well deserved.

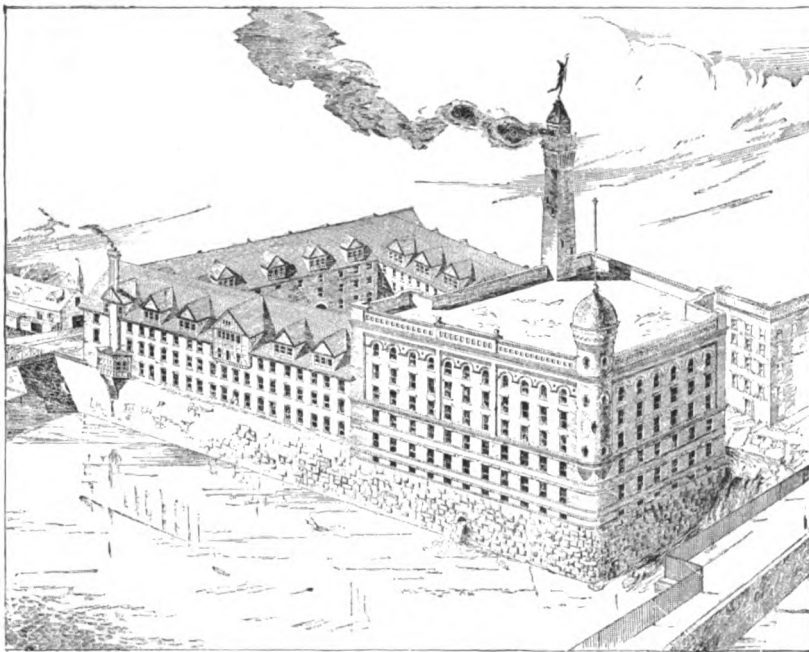
### La Fabricacion de Cigarillos.

WILLIAM S. KIMBALL Y C<sup>IA.</sup>, ROCHESTER, N. Y., E. U. DE A.

**O**CUPA el primer rango entre los fabricantes de cigarros de papel establecidos en los Estados Unidos la casa de los Señores Guillermo S. Kimball y Cia., de Rochester, N. Y., E. U. de A., habiendo establecido su renombre la célebre marca de cigarillos "Vanity Fair" que fabrica.

El tabaco que usa la casa de Kimball es desmenuzado y fabricado á propósito para cigarillos y durante los veinte años que se ha vendido en todas partes la uniformidad de calidad sobresaliente que tiene y á que debe su renombre no ha variado nunca. Es efectivamente la mejor hoja de color brillante que crece en el Estado de Virginia, distinguiéndose por la delicadeza, pureza y fragancia que en tan alto grado posee.

Resulta de lo que precede que la fabricacion de cigarillos á que se dedica aquella casa ha llegado á tomar un volúmen extraordinario. Las ilustraciones que damos servirán para dar una idea de la magnitud que ha alcanzado esa fábrica, tiene ésta efectivamente 340 pies de fachada, midiendo 176 pies de largo por un costado y 218 por otro, teniendo cuatro pisos la parte más antigua del edificio, mientras que la recién construida (que corona una torre en la esquina) tiene seis pisos, incluso el sótano. Excede de novecientas el número de muchachas constantemente ocupadas en torcer cigarillas. Los grabados que acompañan esta descripción muestran el exterior de la fábrica, uno de los talleres y las oficinas privadas de la casa.



EXTERIOR VIEW OF W. S. KIMBALL & Co.'s FACTORY.

### Diffusion Battery for the Extraction of Sugar from Sugar-Cane.

**A** NEW YORK firm has just completed a diffusion battery for the extraction of saccharine matter from sugar-cane. This machine is the result of recent investigations on methods and machinery for the extraction of sugar from cane and the processes for the purification of the extracted juices. These investigations have been conducted under the direction of the United States Government, for which also this machine has been built. It is believed that by the process of diffusion far better results can be obtained than by the old system of crushing the cane by rolls. The principle upon which the process of diffusion is based is simply to force a certain amount of water at a given temperature through the sugar-cane chips confined in a number of cells, and thus extract the juice of the cane. Consequently the diffusion battery which has just been finished consists of twelve cells or cylinders, each having a capacity of sixty-five cubic feet, twelve heaters and an exceedingly nice and compact arrangement of water, steam and air pipes, with necessary valves, cocks, &c.

The cells or cylinders are charged with sugar-cane chips; through these cells and also through the heaters a certain amount of water is forced which will carry the juice of the cane with it, becoming richer and richer in its passage through the sugar-cane, and as soon as this liquid has acquired the desired density or richness it is drawn off.

Before the liquid acquires the right density it may have to be forced through all the cells or it may not; and therefore the arrangement of the pipes is such that this liquid can be forced in any one and any number of cells at a time.

The cells are cylindrical in form; the bodies are made of thin boiler-iron, with cast-iron tops and bottoms, the latter consisting of a frame and gate. These cells are placed in an upright position supported by cast-iron columns. The gate in the bottom of each cylinder is hinged so that it can be swung open, thus allowing the exhausted chips to fall into the carts. The gates are counterbalanced, enabling the operator to quickly open these gates with ease. With gates as large in diameter as those used in this machine, and which have to be opened at comparatively short intervals, difficulty has been experienced in securing a tight joint; but a hydraulic device has been adopted in this battery for obtaining a tight joint between the gate and bottom frame of cell. This device is called the "hydraulic closure."

Just before the gates are to be opened the last charge of liquid is forced out of the cells by means of compressed air. By this method both loss of sugar and waste of water is prevented. For the purpose

of charging the cells the machine is admirably arranged. All the cells are placed in the circumference of a circle. In the centre of this circle and above the cells a pivoted gutter is erected; this gutter has an inclination of about forty-five degrees, and is arranged so that it can be quickly swung to any cell and charge it with cut sugar-cane chips. For the purpose of conveying the cut chips up to the pivoted gutter an elevator is provided, which simply consists of a trough placed at an angle of forty degrees; in this trough are made to move the scrapers or prongs fastened to an endless belt. These scrapers take the cut chips as they fall out of the cane-cutter and convey them to

the pivoted gutter, into which they are allowed to fall. In the cane-cutter the knives are fastened to a horizontal revolving disk. These knives have a peculiar form, their surfaces being grooved so that in cutting the chips the latter will also be grooved. By this means, it is claimed, the packing of the chips by the approximation of smooth surfaces will be prevented, the free circulation of the diffusion liquids established and a rapid and complete exhaustion of sugar promoted.

### Production of Coal in the United States.

**T**HE total production of all kinds of coal in 1886, exclusive of that consumed at the mines, known as colliery consumption, was 107,682,209 short tons, valued at \$147,112,755 at the mines. This may be divided into Pennsylvania anthracite, 36,696,475 short or 32,764,710 long tons, valued at \$71,558,126; all other coals, including bituminous, brown coal, lignite and small lots of anthracite produced in Arkansas and Colorado, 70,985,734 short tons, valued at \$75,554,629. The total production, including colliery consumption, was: Pennsylvania anthracite, 34,853,077 long or 39,035,446 short tons; all other coals 73,707,957 short tons, making the total absolute production of all coals in the United States 112,743,403 short tons, valued as follows: Anthracite, \$76,119,120; bituminous, \$78,481,056; total value, \$154,600,176. The total production of Pennsylvania anthracite, including colliery consumption, was 699,473 short tons in excess of that produced in 1885, but its value was \$552,828 less. The total production of bituminous coal was 1,086,408 short tons greater than in 1885, while its value was \$3,866,592 less.



# The American Mail & Export Journal.

Publication Office: 126 and 128 Duane St., New York, U. S. A.

Cable Address, Catchow, New York.

NEW YORK, JULY, 1887.

**B**ULGARIA and its sovereignty are still a disturbing issue in European politics. The election to and acceptance by Prince Ferdinand of Saxe-Coburg-Gotha of the Bulgarian throne is reported to be satisfactory to Turkey, which nevertheless is not the arbiter, the decision resting with Germany, Russia and Austria. This question will doubtless be discussed by the German and Austrian emperors at their meeting now near at hand, and even if these dignitaries settle it to their mutual satisfaction, Russian opinion may still keep the affair open.

**T**HE revolution in Hawaii appears to have left the government of the island a monarchy only in name. It may be that the influences which have led to this change will cause unexpected complications, inasmuch as it is reported that King Kalakaua is disposed to refuse his assent to the new constitution and claim the protection of foreign powers. Should any European government accept a protectorate over Hawaii, either in the interest of the monarch or his subjects, it would evoke the opposition of the United States, which cannot assent to the exercise of any such authority.

**C**OTTON, which for several months has been held at an abnormally high price under the control of speculators, is now yielding to conditions which the latter are unable to withstand. The corner, or attempted corner, in the staple has failed and the chief operators for a rise have come to grief. The work of cornering the cotton market began in March, and the price was advanced until at the beginning of this month (July) it could not be sustained. Since then it has continuously declined, until about one-half of the advance has been lost. There is no sorrow expressed for the men who have been engaged in manipulating the market, for in this, as in the wheat and coffee deals which collapsed a month ago, public feeling has been adverse to the speculation which has hindered business and prevented exports of the staple. It is even a matter for rejoicing that the parties who could have got out not long ago with a million dollars' profit are now subject to losses which have brought about their failure. The English manufacturers have done well to reduce the output of their mills, thus helping to break up and destroy the combination whose operations have been as invidious to American interests as to theirs. Perhaps we shall now have at least a brief rest from such undue and unwise speculation.

**M**EXICO is passing through a revolution not born of political, class or religious differences. The change which is being wrought is one of commercial and industrial expansion, exerting its influence upon the habits and intelligence of the Mexican people, and for the better. The results are only beginning to develop. A decade hence they will be seen in more practical form, and, we believe, greatly to the advantage of the republic. And this will be due to railway extension, which helps to bring isolated communities into close communication with the world and to give them something to think of and aspire to beyond local jealousies and the circumscriptions of narrow circles of thought and activity. Six years ago there were no more than 500 miles of railway in all of Mexico; to-day there is a total of more than 3,600 miles, the American system embracing three-fourths of the whole. The investments

in railways and enterprises connected with them have amounted to more than \$120,000,000 in cash, and in the train of these have followed other investments in mining companies and other local projects which have added to Mexico's strength and have given further guarantees of her peace and prosperity. While the advantage has not been all on one side, and the people of the United States have also experienced the benefits arising from this change, it is evident that Mexico has entered upon an era of peace and prosperity such as she has not yet enjoyed, and with the more intimate relations with this country she has attained and is yet to attain, she possesses the means of preserving to herself national independence and dignity, with the goodwill and respect of her neighbors.

## THE PANAMA CANAL.

**M**ATTERS in connection with the Panama Canal became so critical in June last that some people high in authority, who have closely studied the progress so far made and impartially estimated the money that will be required to go on with the work, express serious misgivings and apprehend a collapse of the entire undertaking inside of four months. Should this anticipation be realized it would throw the Paris Stock Exchange into a panic and cause considerable embarrassment to many prominent Parisian financial men, not to speak of the government, which, although not interested, can hardly be indifferent to a disaster ruining thousands of small investors.

On June 24 there arrived in New York from Colon, by the City of Para, several general officers of the Panama Canal works on the isthmus. They were Director-General Jacquier, Cashier Chauvert and Secretary Rebeval, who left for Paris the next day. Mr. Jacquier went to Paris for the purpose of submitting his report, which precedes the annual meeting of shareholders. Mr. Noyac-Pioche will act for him on the isthmus during his absence.

The total amount of excavation to January 1, 1887, was reported to be 37,727,000 cubic metres, and the total to be excavated, according to Admiral Ammen's estimate, was 200,000,000 cubic metres, leaving yet to be excavated 162,273,000 cubic metres.

The estimate of 37,727,000 metres already extracted is based upon the payment to contractors for excavation, and does not take into consideration the amount washed back from the dumps on the line of the canal. From reliable sources we are informed that this washing back returns to the line of the canal quite 50 per cent. of the amount excavated, and that the quantity actually removed is not more than 20,000,000 cubic metres.

The excavation becoming more difficult and expensive as it proceeds, it is not likely that more than 12,000,000 cubic metres per year can be taken out of the prism of the canal. If this estimate be correct, it will take about thirteen years and a half to finish the digging. The engineers have not yet agreed upon a solution of the problem offered by the Chagres River. A few lines on page 55 of the Manchester Geographical Society's Journal for the first quarter of the year 1886 state the conditions of this problem in a forcible way, as follows:

The Chagres is a torrent on the scale of a river which intersects the proposed bed of the canal at twenty-nine points, and when swollen by rains, sometimes raising its level thirty or forty feet in a day, discharges upon the valley a flood volume four times that of the highest ever measured on the Thames. The proposed remedy is to dam it up in a lateral ravine, through which it leaps down at right angles to the canal trench, by an embankment whose mass of 20,000,000 cubic metres, with a base of 960 metres, would measure nearly a mile in length and 148 feet high. This mighty barrage will hold a milliard cubic metres of water, suspended on the flanks of the mountain in a colossal basin twenty miles in length.

The cutting of the Cordillera at Culebra, 367 feet above the sea, is a still greater undertaking. The authority just quoted says of this:

M. de Lesseps counted on hard rock, which would have admitted of nearly perpendicular cutting, but borings show that only one-quarter of the depth is of this nature, and the added amount of excavation necessitated by the slope required for soft materials attains a volume not to be expressed in figures. While M. de Lesseps



reckoned on a slope of one in one, or forty-five degrees, American experts maintain that an incline of four to one will be required to insure stability under tropical rainfall, and this will give a cut whose widely severed jaws will yawn half a mile asunder at the summit. Thus the task imposed upon the canal makers is little less than the removal of a mountain mass from Culebra to Cruces, to impound there the arrested Chagres within the walls of its valley prison.

A recent report states that in January 44,000 metres were extracted, in February 101,000. Now that the rains have commenced, excavation will, as it has already done, decrease enormously. Consul-General Adamson sends to the State Department from Colon in June the following report:

The rainy season has now fairly set in, and for the next six or seven months it will be extremely difficult to make much of a showing. At all events, if not altogether stopped, the work will be cut down to a minimum, for it is found that it is next to impossible to excavate in so-called dry digging when floods of rain are falling, as the whole would be under water half the time and the other half in the condition of soft putty. There is not money enough on earth to-day to make the canal if it had to be done in the rain and with the present help. Every shovelful of mud taken out and deposited far enough away to remain out would cost, if not its solid weight in gold, at least so much in good silver coin that the financial problem would resolve itself into a speedy solution of inevitable collapse. The only work that truly prospers is the portion undertaken by the American Contracting and Dredging Company. All the rest, so far as I have been able to learn, is going very slowly. I mention these things for the information of the public, and with no wish to impede or unfairly criticise the work. The truth should be known, and I therefore publish it.

The Panama Canal has already cost the company about \$60,000,000 of stock and \$240,000,000 of bonds. It is evident that it can by no possibility be constructed on the present lines; that if it is to be completed at all (and the practicability of this is seriously questioned) new plans will have to be made and a new capital, at least about double that so far subscribed, be obtained. The question is: Can Mr. de Lesseps persuade the French people to furnish him with \$500,000,000 in addition to what they have invested? Judging from the past there is perhaps a possibility that they may do so, for it is obvious that thus far they have been investing blindly, trusting with fatal confidence to the most inflated and inaccurate statements, taking Mr. de Lesseps' promises for substantial guarantees, and turning a deaf ear to all warnings based upon honest examination of the work. If this mood still holds Mr. de Lesseps may be able to procure further funds to sink in the great fiasco, but in such case the inevitable crash and collapse will only be the more disastrous. Perhaps Mr. de Lesseps hopes that the bubble will not burst during his lifetime, and contemplates the advent of the deluge when he is gone as complacently as did the royal profligate whose financial system he seems to be emulating.

#### THE OUTLOOK IN JAPANESE TRADE.

A PARTY of eighteen passengers, direct from Yokohama, Japan, in twenty days, arrived at an early hour in the Grand Central Depot, New York, on June 21. Leaving Yokohama on May 31, on the Abyssinia, the party reached Vancouver on June 14, and Montreal, via the Canadian Pacific Railroad, June 20, and New York city, via Grand Trunk and New York Central Railways. As the steamers of the Pacific Mail Company from San Francisco to Yokohama take from twenty-one to twenty-four days, they will have to put on more steam with such rivals in the field as the British steamers Abyssinia, Parthia and Batavia. The American passenger traffic to and from the extreme East and our tea and silk trade with Japan can only be gainers by this rivalry; it is indeed particularly welcome to New York, for the Abyssinia brought a full cargo of tea and other merchandise, and the Parthia left Yokohama for Vancouver on June 20 with 3,250,000 pounds of tea for overland and 250,000 pounds for Pacific Coast ports, having besides on board twenty-two European, eighty-seven Chinese and ten Japanese passengers. The British Government is now considering an offer by which a subsidy of £50,000 yearly will secure three lines of first-class steamers on the trans-Canadian route to the East—one line to connect Liverpool with Halifax, and the other two to connect the Pacific terminus of the Canadian railway with Australasia.

The rapidity with which henceforward, whether via Van-

couver or San Francisco, two articles of such importance, both of which we admit duty free, will reach New York from Japan, while quickening the exchanges, cannot help to impart an extraordinary impulse to our commercial relations with that country. As we showed recently in these columns, the importations of Japanese tea into the United States rose from 34,150,518 pounds in 1884, to 39,466,660 in 1885, and to no less than 45,403,135 in 1886; in other words more than one-half of our tea imports came last year from Japan, the total being 87,205,379 pounds.

As a silk-exporting country Japan has figured of late years as follows, compared with the world's production:

	1883.	1884.	1885.	1886.
World's silk production..... tons.	10,048	9,026	9,117	10,630
Toward which Japan contributed as an exporter...	1,555	1,346	1,372	1,484
Equal to bales.....	29,907	25,443	25,884	28,000
Out of which shipped to the United States.....	9,783	11,143	15,034	14,500

The rapidity with which the Japanese silk importation into the United States has increased will be noticed. Following is a statement of American trade with Japan, merchandise only:

Calendar years.	Imports into the United States.	Domestic export to Japan.
1886.....	\$17,427,642	\$2,774,622
1885.....	12,118,974	3,200,663
Fiscal years.	Specie and Bullion.	
1886.....	\$11,184	\$2,146,882
1885.....	13,627	1,462,422

Japan's foreign trade, inclusive of specie and bullion:

Calendar Years.	Import.	Export.
1885.....	\$36,888,000	\$40,555,000
1884.....	29,628,000	32,952,000
1883.....	28,458,412	35,709,000
1882.....	29,403,080	37,237,856
1881.....	30,852,673	30,307,319
Totals.....	\$155,230,165	\$176,761,175
Excess of export.....		\$21,531,010
	Import.	Export.
1885—Merchandise.....	\$29,342,000	\$36,149,000
1885—Specie and bullion.....	7,546,900	4,406,000
Totals.....	\$36,888,000	\$40,555,000

#### PRODUCTS EXPORTED IN 1885.

Silk.....	\$13,033,000	Camphor.....	\$556,000
Silk eggs.....	31,000	Coal.....	1,973,000
Tea.....	6,852,000	Dried fish.....	1,747,000
Copper.....	1,806,000	Rice.....	764,000
Tobacco.....	395,000	Sundries.....	8,605,000
Vegetable wax.....	385,000		
Total.....			\$36,149,000

#### VESSELS ENTERED IN 1885.

	Tonnage.		Tonnage.
Japanese.....	273	French.....	30
British.....	350	Russian.....	33
American.....	66	Scandinavian.....	3
German.....	194	Other flags.....	1
Totals.....			950
			886,079

Japanese trade has during the last five years been suffering at times, owing to financial difficulties with which the government had to struggle because the country was changing too fast—that is, to say embracing too many innovations at a time, involving greater expenditure than the people were prepared for and could digest, and this in spite of the wonderful facility of assimilation which characterizes the modern Japanese. In order to properly explain the obstacles that have arisen, we shall have to note a few general statistics.

The Japanese island group covers an area of 382,447 square kilometres, and had a population of 36,700,118 on January 1, 1882. Two years later the number of inhabitants had increased to 37,451,727, and the last census, 1885, fixed the population at 38,500,000, among whom there were 8,329 foreigners. There are five cities having a population each of over 100,000. These are: Tokio, 914,259; Osaka, 359,320; Kyoto, 263,357; Nagoya, 129,960, and Kanazawa, 107,913. Yokohama's population is 71,467.

The national debt, including \$76,934,727 paper money and a foreign indebtedness of \$7,522,032, amounted on July 1, 1886, to



\$501,679,538. Considering the number of inhabitants, it must be confessed that the country owes a good deal of money. The budget estimate for 1886-7 fixes the income at \$74,695,415 and the outlay at \$74,689,014. The standard in Japan is silver, hence foreign exchange fluctuates with the monetary value of the ounce of bar silver in London. A notable decline in silver stimulates the export trade and interferes unfavorably with the profits of importers. In spite of the decline in silver for twelve months past, business in Japan has been gradually improving, old stocks of imported goods having been worked off and general prosperity has gradually overcome the drawbacks entailed by financial mismanagement, monetary errors and the uncalled-for waste of former years.

The Japanese Government is solicitous to promote the interests of the country at large. This year it has dispatched an official of the Ministry of Commerce to Norway, in order to study the cod fisheries, the preparation of oil, &c., in that country, the object being to develop these industries in Northern Japan, where large numbers of cod appear at certain seasons.

The fact that a country so enterprising and possessing such resources is now within twenty days' steam of New York, and that, as we have shown, the United States are even now taking off of its hands the bulk of what it produces, opens a commercial and industrial vista of the most encouraging kind. We, therefore, hope that our merchants and manufacturers from now on will study more and more closely the real wants and tastes of that singularly intelligent nation, so as to give, at the same time, a vigorous impulse to our domestic exports in that direction.

#### A NEW PHASE IN OUR DOMESTIC EXPORTS TO MEXICO.

THE postal treaty between Mexico and the United States, becoming operative from July 1 of the current year, is a great step forward in our business relations with the neighboring republic. The rates for all mailable matter are the same as all domestic rates in the United States, and the prohibited articles are the same as prohibited in our domestic mails. Ounce letters go for two cents, newspapers from the office for one cent per pound, and third-class matter one cent for two ounces. The chief advantage derived from the new treaty is that small packages of merchandise weighing  $4\frac{3}{4}$  pounds may be sent from one country to the other at a low rate, the consular and customs fees being saved, although the duties will be collected on delivery. The consul's certificate, involving an expense of \$4 to \$5, has been hitherto an impediment to shipping small invoices to Mexico; another obstacle was the customs fees.

This is now changed and our export trade to Mexico will henceforth possess the powerful aid of the parcel post. A private person in Mexico, a druggist, planter or stationer, may send a small order, accompanied by a money-order, to any American manufacturer or dealer direct, and with the least possible delay will receive what he orders, and pay the assessed duty in the Mexican post-office of his locality.

American manufacturers and dealers will not be slow in availing themselves of so great an advantage. It will be a heavy blow at the Hamburg, Parisian and English firms in the cutlery, hardware, notion and stationery trades established in the city of Mexico and elsewhere.

It is patent that the Central and National railways have completely revolutionized trade with and in the interior of the sister republic. Mexican consumers and dealers will be only too glad to henceforth get innumerable articles cheap and of the very best quality on which the European importers have pocketed, for fifty years and more past, exorbitant profits, to which were added enormous freight charges, the commission at Vera Cruz and customs and consular fees, altogether aside

from the duty and loss of exchange, which will remain the same. The Treasury statistics at Washington will, of course, not show the change which this, so to say, retail trade involves, but the execution of these small orders is in most cases the forerunner of large ones which, not going by parcel post, will appear in the Federal export returns. Our domestic exports to Mexico during the calendar year 1886 were \$6,490,720 worth of merchandise; the year previous they were \$7,271,783. Our imports thence were \$12,191,535 worth of merchandise, against \$10,491,590 in 1885. The coin and bullion movement between the United States and Mexico was as under:

Fiscal Year.	Imports		Export to Mexico. Coin only.
	Bullion.	Coin.	
1885.....	\$4,136,933	\$9,861,429	\$77,028
1886.....	3,859,933	12,188,054	110,035

The foregoing figures show that the influx of silver and merchandise from Mexico into the United States is, taken together, very large; whereas the amount of domestic goods that we have been shipping to Mexico is comparatively moderate. Some of the silver we receive from Mexico may, of course, have been in transit to Europe merely, but the difference is considerable. It is consequently all the more desirable that a stronger current of American goods toward Mexico should set in, and this parcel-post execution of small orders will powerfully contribute to bringing this about. It may also be mentioned that Mexico is a rich country, and that foreigners have been amazed at the enormous amount of silver coin circulating freely even during the worst revolutionary times. The purchasing capabilities of the people are ample, even among the Indians.

American manufacturers and dealers not prepared for the Spanish-American trade will, of course, have to consider that the bulk of the people of Mexico do not understand a word of English. Hence, if a larger trade is to be got under way, it will be necessary to send catalogues and price-currents in Spanish, but the postage is a mere trifle.

On June 22 the foreign merchants in the city of Mexico were informed by telegraph that the new postal treaty had been signed by President Cleveland the previous day. This piece of news caused great alarm among them, and the government was urged to declare Vera Cruz a free port. Vera Cruz is, indeed, their only hope, now that the great breakwater there, involving a cost of \$4,500,000, is to be finished in five years from April 20, the date of the new contract with Señor Agustin Cerdan, superseding the previous forfeited contract cancelled through default.

But even the advantage of becoming a free port and having its dangerous harbor improved will hardly enable Vera Cruz to regain its enviable position of being the golden gate through which foreign merchants domiciled there and in the capital made their fortunes. The steel bonds which tie Mexico to her northern sister are there and will be multiplied, spreading over the republic gradually. Thus, in addition to the rail communication now existing, the San Antonio and Aransas Pass Railway of which 320 miles are in operation, will connect with the Mexican National at Santiago within a twelvemonth from now, and the run can then be made over this line likewise without break from New York to the city of Mexico.

Small as this parcel-post arrangement with Mexico may appear at first sight, it is, in reality, more important than if the suspended reciprocity treaty had received force of law through an enabling act.

The reciprocity treaty gave the American export trade few advantages in comparison with our admitting duty free tobacco, sugar and fruit, and besides this the Germans would have come in on the same terms under the "most favored nation" clause. If Americans make the best of this new advantage it may be extended after awhile to Central America which, at a not very distant day, will, through Guatemala, be added to the North American railroad system.



## Communications.

### Philadelphia.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., June 30, 1887.

QUEEN VICTORIA eats Philadelphia crackers. We know it because we sold her some in, of course, the usual roundabout way, as her Majesty never had to go to market with her basket. Pillsbury sells her flour. Mark Siddall, of soap fame, who runs a wire bustle factory and who is credited with a profit of \$30,000 a year out of the business, says that his bustles get nearer to the Queen than the palace gates. A straw-slipper house here, which has a prosperous agency in London, declares that her Majesty wears its slippers. As this is Jubilee week I am excusable, or hope that I may be, for making these personal allusions.

The export trade of Philadelphia is of that steady nature which deprives it of any sensational character. It is extending on its own merits. New York agencies manage the most of it and we only fill orders. It is a mistake not to keep up a drumming system, but then how can it be done? Several firms here have representatives who make a trip every year or so to South America or to Europe, but they don't make the headway a native would or one who knows the countries visited. The business, it seems, must take care of itself for the present. Our New York agents and our London correspondents, to the extent we have correspondents, write us more encouragingly and have also been ordering more encouragingly.

It is, perhaps, strange that American crackers or soda biscuit should beat the foreign make, but so it is. Walter G. Wilson & Co., 210 North Front street, are shipping regularly every week from twenty-five to one hundred cases, each case containing a dozen boxes. Their London agent is David Challon, and he distributes the goods over Europe and as far as India, where they are a favorite article of diet among the British residents. The recipe has been stolen, but as the English cannot steal our peculiar climate we are able to defiantly hold our trade.

We are not so fortunate in the matter of confectionery, as has been heretofore remarked in the Philadelphia letter. The English began to learn how to make American candy, as they called it, from an American who made his fortune here years ago out of a liver pad and who went to London on this candy venture. At first the English could scarcely believe their sweet-tooth that our product was really better than theirs. They had never thought of getting it up in the box style, or of making the almost infinite varieties of it that we do. But they imitated it and have ever since been imitating our specialties. Had we retained all of the trade that has been made the confectionery business would have been immense. As it is, it is fair. Our leading houses are exporting moderate quantities, but have no faith in permanently retaining the trade.

The blacking trade, represented by Jas. S. Mason & Co., 138 North Front street, holds its own against foreign competition. The blacking is more extensively used by harness makers and carriage manufacturers than for the purpose to which it is applied here. The shipments have been steady for a year and it is a staple article in several foreign countries.

In the matter of machinery it is pretty difficult to enumerate just what is being done. Perhaps twenty or thirty machinery makers are doing an export business. Some have a well-established custom, others are passing through the infantile period where a little cold blast is likely to discourage future efforts. The Pittsburg people are working the export trade directly. Westinghouse has foreign agencies and is constantly sending machinery abroad. Through his men direct relations are being established. The Pottsville bridge builders are just about shipping a bridge to China. I am glad to know that the Chinese and Japanese visitors sent hither to see and learn are seeing and learning so much. They are broad-minded people who recognize that we have made progress in directions in which they do not know the meaning of the word. They ought to be furnished with a small shipload of presents, for a permanent exposition in Shanghai on a small scale. The whole Western trade would well be bowing before a people it affects to despise for the sake of their trade.

S. A. Stern, the well-known publisher, was at last accounts in Shanghai, on his way around the world.

The growth of Philadelphia as a manufacturing centre is phenomenal. Three hundred considerable companies and corporations have taken shape during the past year. Industrial activity has been stimulated by the establishment of more intimate relations with the South. True, a good deal of the money which has been going out of this State and into the Southern States is mainly for speculative purposes, such as the purchasing of large timber areas, which it is intended to preserve for future use.

The demand for machinery of every kind, from the ten-wheeled locomotive to the smallest engine, has never been so great as it is at this time. Several of our large concerns will have no vacation time for their workmen. The Baldwins have more men at work than for three years. The Whartons are crowded on orders. The lathe makers have a summer's work in hand and the iron and steel makers are busy. The rail mills of this State have contracts for 600,000 tons to be delivered between now and Christmas. The car works are so overrun that they are now refusing orders and are begging outsiders to help them out. We may expect this great activity as long as the heavy railroad traffic and earnings continue.

Slate from Northampton County is finding a market in Australia. It is, of course, carefully packed, and only the very best is sent abroad. A bridge is being shipped from Pottsville to China, and from the looks of correspondence there will be several orders of this character before long. Foreigners are pleased with the interchangeable parts of American machinery, which facilitate repairing when necessary. Everything is found by them to be mathematically exact, and the work is light and durable.

The exportation of American locomotives has progressed very slowly of late, because of the fact that American makes and improvements are being more and more imitated. English engineers, with their accustomed pertinacity, refuse to admit the points of superiority of the American type, which Continental and colonial engineers have admitted and which they are patiently following up in construction. The locomotive works throughout the country are very busy, and railroad companies are gradually increasing their repairing facilities so as to be more independent of locomotive builders. A great deal of repairing is going on, made necessary partly by the increasing speed of ordinary freight and coal and lumber traffic.

The matter of elevated railroad building, which is now agitating the people of Philadelphia, is the result of an overcrowded condition. Shop and mill room is scarce in the city. In the southern portion and in the northeastern section of the city along near the suburbs, such as Tacony and Bridesburgh, there has been an overflow. An immense textile mill is being erected near Tacony, and the Disstons are putting up a large steel mill. All told, about fifty new manufacturing enterprises have either taken root in these localities or are projected. The new Baltimore and Ohio Railroad has given manufacturing and shipping interests a stimulus in the southern section of the city, and real estate and dwelling-houses are in demand. The need of more rapid transit is keenly felt, but there is the usual opposition from those who will suffer more or less from it. The scheme contemplates the erection of between forty and fifty miles of road. This will be a nice job for our structural iron makers.

The glass-making industries of the State are in a good condition, especially in table, prescription, lamp-chimney and tumbler branches. The export trade is quite an item. In window-glass the Belgian importations allow our makers the control of only two-thirds of the home trade. The manufacturers claim that the high wages they are obliged to pay deprive them of most of the remaining third.

The extension of mail facilities with Mexico would be of some assistance to us, but there is not the volume of business to be expected with that people which we look for farther South.

The nail makers are increasing their trade with Cuba, or rather broadening its foundations. Our ore importers are preparing for a great increase in ore shipments from that island, and two blast furnaces are now under construction near Baltimore to make steel out of it for nails.

The latest news about gas fuel is that a system for utilizing the waste of the anthracite coal mines has been perfected and that it will be shortly introduced on a large scale in Eastern Pennsylvania.

Trade combinations have less influence on prices than in past years, because of the great expansion of productive capacity. The makers of



all kinds of machinery and motive-power, and railroad and building material, were never busier, and in many instances their contracts extend months ahead.

The fears expressed by prominent English manufacturers after they have visited our mills are not idle, and they go home and tell their people they must wake up. American machinists and manufacturers are making a closer study of European methods and mechanical appliances than foreigners are, and it is no prophecy to say that this study will result in the enlargement of our foreign trade in machinery.

Immigration is another question which is pressing itself onto the attention of our manufacturing interests. A few years ago it was looked upon as a good weapon to control trades unionism with. Different opinions are expressed now. Relatively few skilled workmen come, and their habits and skill are different. They cannot readily adapt themselves, and when they do soon make unreasonable demands.

Agricultural-implement agencies, representing Western concerns, give encouraging reports as to orders from abroad at headquarters. Americans have taught the outside world the science of government and a sound political economy, as well as sound financial doctrines. They are teaching the world how to till the soil and are likely to retain control of the trade they are building up longer, because of the difficulty of establishing competing works. Plows, reapers, mowers, &c., are going to some very far-off points.

This year South American markets will be visited by several enterprising houses by proxy. Trade there would grow faster if we had ships. If the Panama Canal opens in 1890 there will be such an impetus given to trade with the western coast as will be felt in all our large manufacturing centres.

The volume of money is kept large enough for business requirements. An increase of \$70,000,000 in one year accounts for much of our activity. While this sound policy prevails of keeping the steam-boiler full of steam there will be no cause for predicting disastrous depressions.

The M. A. Furbush Company has just shipped three sets of 60-inch cards for a manufacturer in Mexico, and the prospects are favorable for quite a business there.

D.

### London Letter.

[CORRESPONDENCE OF THE AMERICAN MAIL.]

LONDON, June 28, '887.

**A**LTHOUGH there is no lack of complaints as to slackness of trade, prospects seem to be brightening a trifle in several branches. Last week was practically a blank, owing to the Jubilee celebration, but there is a disposition to make up for lost time.

A decidedly better tone prevails in the London wool market and prices show an inclination to rise. The demand is principally from export firms for the better sorts of merino and export wools.

The Bradford market, however, at present shows no sign of following suit. There seems to be a want of confidence in the prevailing advanced rates and buyers are pursuing a hand-to-mouth policy.

Manchester manifests a better tone for raw materials and inquiries are reported from Japan for yarns, but the improvement is far from general.

A fair business is doing at Leeds, and large orders are reported from the Continent and United States for the latest novelties in cloth suitable for ladies' jackets, mantles, &c. Prices, however, show very little variation from those of last season. Government contracts are keeping army-cloth makers well engaged, and they are working overtime.

Produce markets are quiet after the holidays, and few sales are reported.

In the North of England the iron and steel trade is enjoying a heavy demand, more especially the latter, and the steel-rail rollers are reported to be full up for the next twelve months. An extensive contract for the Mediterranean Railway Company has been secured on Teeside, and the demand continues from the States and Canada. Prices are consequently advancing.

The Russians seem bent on driving British coal out of the Black Sea ports, for they are again revising the iron and coal duties.

Export hardware merchants are complaining freely of the keen competition in foreign markets, but in many cases they have only

themselves to blame. If they will insist upon old-fashioned profits it is not to be wondered at that orders should pass them. I know of instances where such current goods as Weston's pulley-blocks have been invoiced in quantity with a margin of 200 per cent., cash on receipt of bill of lading. Some of our Sheffield and Birmingham merchants have actually been drawing the line at 25 per cent.! It seems to me that these profits, to quote a very popular song in this city, are "all very fine and large." These firms handle a good many American articles from time to time. Such goods as spirit-levels, belt punches, mincing-machines, fret-saw machines and belt fasteners pass through their books from time to time, and Stow's flexible shafts have also been a source of profit to those firms doing a Spanish trade.

The American Exhibition is receiving unflagging attention from the British public, the exhibits creating a great deal of interest among the visitors.

WAL.

### Catalogues and Price-Lists.

TO READERS.

**T**HE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of THE MAIL in which they are noted.

D. E. WHITON MACHINE COMPANY, New London, Conn., U. S. A.—Illustrated catalogue and price-list of gear-cutting machines, centring machines, lathe and drill-chucks, &c.

PERCE & NOBLE, Newark, N. J., U. S. A.—Illustrated catalogue of jewelers machinery.

E. C. ATKINS & Co., Indianapolis, Ind., U. S. A.—Price-list and catalogue, with illustrations of saws and saw tools.

WINSTED EDGE-TOOL WORKS, West Winsted, Conn., U. S. A.—Catalogue and illustrated price-list of chisels, &c.

MOUNT CARMEL BOLT COMPANY, Mount Carmel, Conn., U. S. A.—Revised price-list of bolts, rivets, machine screws, washers, nuts, &c.

HENRY CHENEY HAMMER COMPANY, Little Falls, N. Y., U. S. A.—Price-list of hammers.

ST. LOUIS VISE AND ARTESIAN TOOL COMPANY, St. Louis, Mo., U. S. A.—Illustrated catalogue of well drilling and prospecting machinery.

BELCHER & TAYLOR AGRICULTURAL TOOL COMPANY, Chicopee Falls, Mass., U. S. A.—Descriptive and illustrated catalogue and price-list of agricultural implements.

PHILADELPHIA WOOD TOOL WORKS, Philadelphia, Pa., U. S. A.—Illustrated catalogue of wood-working machinery.

P. BLAISDELL & Co., Worcester, Mass., U. S. A.—Illustrated catalogues of machinists' tools, &c.

D. F. BARCLAY, Elgin, Ill., U. S. A.—Illustrated catalogue and price-list of dairy goods.

NEW DOTY MANUFACTURING COMPANY, Janesville, Wis., U. S. A.—Illustrated catalogue of hand and belt-power punching and shearing machinery.

BAIN MANUFACTURING COMPANY, Charleston, Ill., U. S. A.—Illustrated catalogue of stoves, ranges and hollow ware.

INITIAL steps were taken recently for constructing a Russia iron mill at Freeport, about thirty miles north of Pittsburgh, Pa. Farley Alden, member of the firm of W. H. Rogers & Co., who will build the iron-works, said: "This will be the first Russia iron mill ever built outside of Siberia. An imitation of Russia iron has been made in this country for some time, but not impervious to rust. Imperviousness to rust is the test of genuine Russia iron. Few persons imagine what risk was run in learning the secret of the treatment by which Russia iron is made. There are only three people outside of Russia to-day who know this secret. They are William Rogers, W. H. Rogers, his son, and Mr. Nicholas, nephew of William Rogers. About eighteen years ago William Rogers was sent out as Pennsylvania State geologist to Russia. He had credentials addressed to ex-Governor Curtin, Minister at St. Petersburg at that time. As long as he confined his explorations to the mines he attracted little or no suspicion, but as soon as he set his foot inside the iron mills of Princess Demidoff he was subjected to the most violent espionage. It must be remembered that the men in the mills who know the secret of making Russia iron are never allowed to quit the mills. With the special study he had made of iron making before going to Russia, he was not long in discovering the much-coveted secret, though he had much trouble to evade suspicion. Had he been detected, he would have been forced to remain in Siberia the rest of his life."



## U. S. Ministers and Consuls.

### Field for Agricultural Machines in Germany.

CONSUL GOODWIN.

THERE ought to be a good market here for American machines and utensils, in spite of all difficulties in the way, but there will never be until our manufacturers are prepared to go to work in the same careful, plodding but energetic way that the Germans have worked to secure the large trade which they now control in South America, Central America, Australia and the East. They must not expect, no matter how excellent their machines, to build up a trade here by now and then making a great splurge, or wholly by advertising in trade newspapers, or by the spasmodic efforts of a few traveling agents. The value of judicious advertising in first-class trade journals, American and foreign, which have a circulation and standing in Germany, has been proven to my satisfaction, and to that of many consuls who have been longer in the service than I have, to be considerable; but advertising alone will not build up an important and profitable business for Americans here. Our strong agricultural-machine establishments should be represented here by permanent resident agents, not men of the horse jockey, watch-trading stamp, whose aim is to entrap some confiding farmer into signing a note under the impression that he is merely signing a receipt or an agreement, but men of character and ability, having a thorough acquaintance with the German language, a complete knowledge of the uses and advantages of American machines, and a firm belief that they are superior to all others. Such men, well paid, would take great pride in their work and would in due time accomplish very important results.

The Bureau of Statistics at Washington shows that in ten years over \$6,000,000 worth of American agricultural machines have been sold in Germany. Probably most of the sales were made to the farmers of Bavaria, Thuringia, Baden, Wurtemberg and the Rhine country, certainly a small proportion to Saxony. Intelligent, systematic, persevering effort on the part of our manufacturers would have made the figures nearer ten than six millions.

It is a mistake for the great agricultural-machine establishments of the United States to establish general agencies for all Europe in London. Germany is fast becoming independent of England in every way, and Germans would rather deal directly with Americans than indirectly through Englishmen.

Consul Lang, some time ago, made the suggestion that a permanent exhibition of American products and manufactures be established in Hamburg; an excellent idea, and one which the Germans have adopted in several parts and profited by. If one of our largest agricultural-machine manufacturers would send over a thoroughly competent man, establish him in Berlin with a stock of manufactured machines for exhibition, and give him authority to select able assistants to be located in the chief commercial city of each of the German states and principalities, I believe that the sale of American machines and implements could be doubled in the next five years.

It is a great compliment to the ingenuity and practical skill of American workers that nearly every important agricultural machine manufactured in Germany, and especially those whose praises are extolled the highest, are patterned after American machines as closely as can be without infringement of patent rights. But though they can be sold cheaper than the American machines they are not nearly as good. Take the best American thresher, for instance; it is much lighter than any made in Germany, or any other European country; it has greater capacity, and in threshing and cleaning grain will do nicer work than the best German machine. These machines are fitted with every attachment demanded in foreign countries. What is said of the lightness, capacity, and economy of the American thresher may be said with truth of our portable and traction engines, mowing-machines, binders, plows, cultivators, &c.

So many practical machines are invented and put on the market, every week almost, in America that it is difficult to keep run of them. Some have never been seen in Germany, even by wealthy proprietors who carry on farming on an immense scale and profess to keep a sharp watch for all new machines of great practical importance to them. I believe there is a plow made somewhere in the United States which is so constructed that two horses can do the work of three, if

not four, and which will turn a square corner as nicely as a gentleman's coupé, the driver not quitting his seat. This plow is said to be comparatively light, and yet strong and durable. Such a machine might frighten the natives in these parts when first introduced, but if it is what it is claimed to be intelligent effort would secure a market for it. What the average German farmer must be convinced of is that American-made machines are durable. Everything made here is clumsy and heavy, and the idea is that it must be so in order to be durable. The farmers hear and read a great deal about the lightness of American machines and the rapidity with which they work, but they are quite uninformed as to their durability.

So, my friends who make the best agricultural machines in the world, if you would build up a large trade in Germany and in Saxony, take practical steps to show the farmers that your machines have other merits besides lightness and speed, capacity and economy—four excellent qualities. Show them that they are durable.

### The Germans in East Africa.

CONSUL GOODWIN.

THE number of stations and agencies thus far established by the German East African Society is thirteen, and the following particulars concerning them, recently made public, may be of interest to many Americans:

No. 1.—Chief depot at Zanzibar, founded by Dr. Carl Jühlke in December, 1884. Here are located the headquarters of the society, and are stationed the general manager, government architect Hörnecke, and a local manager, Herr Rühle.

No. 2.—Simaberg, an experiment station founded in January, 1885, by Count Pfeil, and enlarged and for some time in charge of Herr Schmidt, a practical gardener. At this station are a steward, Herr Nielsen, and about twenty-five day laborers under the direction of the steward. A large stone house for the use of the steward and visitors has been erected and a number of smaller houses and stables. At this station all the tropical and European fruits and nuts are raised in abundance, and tobacco of good quality.

No. 3.—Kiora, in Usagara, near Simaberg, founded by Herr Söhnge in June, 1885, now in charge of a native overseer. An average of eight day laborers are employed the year round, and a good article of cotton is raised. A stone house has been built, and a number of stables, where cows, goats, asses and various kinds of fowl are housed.

No. 4.—Halule, in Somaliland, not far from Cape Guardafui, founded by Herr Winter in 1885, now under his charge, not yet much developed.

No. 5.—Dunda, in Usaramo, on the Kingani, founded by Lieutenant Kreuzler in 1886. There are now stationed there the lieutenant in charge, a chief gardener, superintendent of plantation, a blacksmith and about sixty laborers employed by the day. A store, several houses, stables and a blacksmith shop have been put up. About 170 acres have been planted to rice, maize, potatoes, sugar, cotton and tobacco.

No. 6.—Madimola, in Usaramo, on the Kingani, founded in 1886 by Lieutenant (Baron) St. Paul-Illaire, and now occupied by him, a head gardener and engineer, thirty to forty laborers employed and thirty-two acres planted in tobacco, cotton, rice and maize.

No. 7.—Korogwe, in Usambara, on the Pangani, founded in 1886 by Lieutenant (Baron) von Gravenreuth. A large area devoted to maize, bananas, cocoanuts, beans and potatoes.

No. 8.—Usaungula, on the Kingani, in Usaramo, founded by Lieutenant Von Zelewski, Herr Graham and Lieutenant Von Bülow; thirty men employed and fifty acres planted in cotton, tobacco, beans, &c.

No. 9.—Petershöhe, near Mbusine, in Useguha, founded by Lieutenant Von Anderten in 1886, and employing two head farmers and thirty-five laborers. Crops—cotton, tobacco and bananas.

No. 10.—Bagamoyo, in district of Zanzibar, on the coast, founded by Lieutenant (Baron) Von Bülow in August, 1886.

No. 11.—Tanganizko, on the Kilesi, in Girinama, a station of much trade importance, founded in 1886 by Lieutenant Von Anderten, and occupied by him and three assistants.

No. 12.—Hohenzollernhaven, on the Wubuschimündung, established by Herr Janke, and to be in charge of Count Pfeil, assisted by Lieutenant Von Baerensprung, Dr. Spuhn, an agent and superintendent.



ent. This station is expected to become of considerable importance as a trading centre.

No. 13.—Masi, on the Pangani, in Usambara.

### Emigration from Holland.

CONSUL ECKSTEIN.

**I**N 1881 a government board for superintending the passage and carriage of emigrants entered upon its duties at Amsterdam and Rotterdam. It was in that year that regular direct steam communication was established between Amsterdam and New York.

The objects of creating it were two-fold—firstly, to insure all required and necessary protection to emigrants in general, and, secondly, to invite and encourage foreign emigrants to come to and embark from Amsterdam and Rotterdam, and thus benefit the local steamship companies and otherwise foster the interests of those places.

The great falling off in the number of emigrants from this country to ours during the last three years forms a noteworthy feature as relating to the matter in hand, and I endeavor to give in this place the best explanation for it that I can.

I feel justified to say, in the first place, that it has not been owing to favorable surroundings or prosperous conditions prevailing in Holland during that period of time, but that, on the contrary, nearly all material interests were, and particularly in 1884 and 1885, in an exceptionally unsatisfactory state in this country.

What, then, caused the decline in emigration?

I answer that to me it seems to have been caused, in part, because many parties anxious to come to our shores lacked the required means for accomplishing that object.

The facts that less favorable accounts were received here during those years respecting the general state of material affairs in the United States, and that less substantial assistance reached here from relatives on our side to enable parties to come on, had also much to do with the decline in emigration from this country.

Again, the labor difficulties which induced our government to adopt certain measures restricting indiscriminate emigration have not only had the effect of keeping really objectionable persons from coming to the United States, as certainly is desirable, but they have also had the effect of preventing quite a number of unobjectionable, perhaps desirable, persons to seek homes among us.

I base this statement upon the fact of having been applied to for information a number of times by intending emigrants, against whom there could have existed no objection to be allowed to land and who had been led to believe that certain obstacles would be placed in their way on arrival at our shores.

This matter may deserve the special attention and consideration of our government, as what I am saying about it may apply to other countries as well as to Holland.

My attention has also been called to the further fact of the great depreciation in the price of land suitable for farming and dairy purposes during the past few years, which presumably led to purchases in many cases by parties who under ordinary or other circumstances would have emigrated to the United States.

The Netherlands are anything but a migratory or roving sort of people. They hold in high honor everything historical and traditional relating to and which sheds any lustre or reflects any credit upon the nation, and of which there is a great deal, as is universally acknowledged, and they, furthermore, are most sincerely attached to the existing and principal national institutions.

It can well be imagined that under such circumstances emigration from the country is but rarely undertaken for insufficient or trivial cause or causes, but is more generally only resorted to when fair prospects exist that those about to give up their homes permanently to settle themselves in the United States, or in any other foreign country, will by so doing greatly improve their chances for bettering their condition in life, and the condition of those who go with them, as well as of those who may be dependent upon them and whom they may leave at home.

From my own observation, and authentic information, I am induced to believe and to state that the main cause of emigration from Holland to the United States, what there has been of it and is, consisted and consists hereof: "That under any wise normal conditions prevailing in our country, when commerce and trade, manufacture and agri-

culture are flourishing, or only fairly prosperous, the chances there for the newcomers, especially if intelligent and industrious, are generally considered to be, and in my opinion really are, far superior to what they are or would be in Holland at any time to earn a competency or accumulate wealth."

Thus it is that emigration is ordinarily more influenced and increases or decreases according as favorable or unfavorable news respecting the economical and social conditions of the United States is received and circulated here than it is affected by the local or home state of affairs.

To a certain but only very limited extent other causes underlie the emigration from this country, but it can be said that neither military service, taxation, strikes, nor even surplus population bring about much of it.

### Tin-Plate Trade of South Wales.

CONSUL JONES.

**I**T is well, perhaps, to point out that for several years past there has been more money lost than made in the tin-plate trade in South Wales. Out of an average of eighty-two works in existence during recent years there have been no less than forty failures; and of the four works named in the department's circular, namely, Machen, Pontymister, Pontnewydd and Rhiwderin, three, namely, Machen, Pontnewydd and Rhiwderin, have failed, and are now standing idle. Moreover, the works at Machen and Rhiwderin have come to grief twice during the last five years.

There are a large number of tin-plate works in this district, and the area covered by the various manufactories averages from two to ten acres. The materials out of which the buildings are constructed are stone and brick, with roofs made partly of stone and partly of pan-tiles. There are no puddling furnaces in any of the new works, and hence no refining fires or hollow fires.

The principal material now used in the manufacture of tin plates is Siemens and Bessemer steel. Manufactories working the Bessemer material are situated at Barrow, Dowlais, Ebbw Vale, Tredegar, Rhymney and some other places. But the larger works, using the Siemens-steel bars, are grouped around Swansea. There are, moreover, three large steel works making bars for tin plates on the Siemens principle in that district.

The number of mills in each manufactory averages from two to ten, and the average weekly output of each mill is about 500 boxes. One engine generally works two mills, with cold rolls and other appliances for completing the plates, and two or three boilers are generally used for each engine. Coal is the fuel consumed. Most of the works here are capable of turning out about 500 boxes per mill per week, and the average would be about 480 boxes for the year. The number of persons employed is about ninety per mill. The total amount of wages paid in the works of three mills would be from £9,000 to £9,500 a year.

Siemens-steel bars are a little dearer than the Bessemer-steel bars, but not very much; the difference is about 5s. or 10s. per ton. And the price of iron, again, is a little lower than steel bars; the difference, however, is not considerable.

### Kerosene Trade of Osaka and Hiogo.

CONSUL JERNIGAN.

**O**N June 18, 1886, I forwarded a statistical table showing the extent and value of the trade in kerosene oil at this port from 1882 to 1885, inclusive. I am now able to bring the tables down to a later date and to show the extent and value of the trade in this article for the year ending December 31, 1886. During this latter year there were imported 1,216,239 cases. This is more than were imported during any of the years named in the table above referred to. The deliveries during the year ending December 31, 1886, amounted to 919,300 cases, and if to this amount be added the number of cases re-exported (26,000) there were, as stock on hand December 31, 1886, 469,739 cases.

The prices during the year under consideration ranged from \$1.71 to \$2.05 per case, being an average value of about \$1.82. The highest prices were obtained during the latter part of the year 1886, produced by temporary shortness of stocks, and without this favorable condition prices would probably have not exceeded \$1.75 per case. There is no



oil imported into Japan that can compete with American oil. In fact, I am not aware that oil from any country except America has been imported at this port. Petroleum in Japan is not scarce, but Japanese petroleum has not yet been sufficiently exported to be important.

If there is no unfavorable legislation on the part of the Japanese Government in imposing higher duties, American oil will continue to maintain its supremacy in this market.

The cost of loading oil here is, for storage, insurance and interest, about three cents per case (of ten American gallons) per month.

### Sugar Industry of Brazil.

CONSUL-GENERAL ARMSTRONG.

I HAVE before alluded to the precarious condition of the sugar industry of this country, and to the suggestion made in the Brazilian Chamber of Deputies, by a prominent and influential member of that body, that his government should endeavor to obtain from the United States a reduction in the import duty on sugar, offering in compensation to reduce the duties on American merchandise imported into Brazil.

The sugar merchants of Rio de Janeiro recently held a meeting at which there was reached an exposition of the state of the sugar trade, from which it appears that in some of the most important sugar districts of the empire the planters receive for their raw sugar only from one to two cents per pound, and that, in the opinion of the meeting, composed of some of the most prominent sugar merchants, "the country is seriously threatened with the total ruin of its sugar industry." It was therefore resolved "to organize an association for the purpose of defending the important interests now in jeopardy," and I observe that one of the articles of the programme of this association favors the policy of negotiating commercial treaties with sugar-consuming countries, and "especially a treaty of reciprocity with the United States for the purpose of increasing the consumption of Brazilian sugar among its population, since that republic is in a position to become the principal sugar market of the world."

Brazil at present exports annually from 200,000 to 300,000 tons of sugar, corresponding to about one-fourth of the quantity consumed in the United States. It possesses vast tracts of land admirably adapted to cane culture, so that with remunerative prices and an adequate supply of labor it could easily furnish all the sugar needed for our consumption beyond what is produced on our own soil, as it already supplies us with the greater part of the coffee which we consume. And, although the balance of trade is now largely against us and the increased consumption of Brazilian sugar would greatly augment the amount of our importations from Brazil, there can be no doubt of our ability to ship to this country merchandise at least equal in value to that which we would receive therefrom if the Brazilian Government, to save its sugar industry from ruin, should admit our products on terms that will enable us to undersell our European competitors. This we hope to do finally in every case, but a commercial treaty, properly framed, would permit us to accomplish immediately that which must otherwise be the result of many years of toilsome and unremitting labor.

### Tonquin as a French Colony.

MINISTER DENRY.

IN 1884 the French colonial possessions in Asia covered 59,964 square kilometres. As a result of the Franco-Chinese war the republic increased this area, chiefly in Tonquin, to 149,967 square kilometres. The native population owing allegiance to the French flag shows an increase, also, through the addition of Tonquin, of 9,116,642.

This increase in territory and in population has been purchased by France at a cost, as estimated, of nearly 20,000 men, and about 70,000,000 taels in money.

China also contributes to the cost the lives of almost 100,000 men, lost chiefly by disease, and a sum of money scarcely short of 150,000,000 taels.

The natural inquiry arises as to the profit of such acquisitions as compared with the cost. The only results that can be reached are based on conjecture. It is hardly probable that Tonquin, with the poverty and want of civilization of its people, and the unsuitableness of its climate to European constitutions, will ever be to France what

Holland's possessions in the south have been to her. A comparison with French Cochinchina affords the best data for an estimate of the future value of Tonquin as a producer or a market. The last return we have from there is the summary for the first six months of 1886.

The import trade, excluding treasure, was worth \$7,362,000; treasure, \$6,368,000, of which \$3,640,000 was on government account. Of these total imports of \$7,362,000 France furnished only \$1,033,000 in articles for the use and consumption of foreigners. China furnishes more than one-half the remainder, and the Straits have a large share.

The export trade of the same period was \$10,895,000, of which nine-tenths was rice. Of this \$87,000 went to France.

This showing, though somewhat in excess of the same period for previous years, cannot be considered encouraging.

Tonquin has three times the population of Cochinchina, and is said to be more fertile. The turbulent character of its people, however, and the proximity to the Chinese provinces will necessitate for a long time to come the maintenance of a large military force and the expenditure of sums of money which will probably make the country a drain on rather than an advantage to France. It is claimed that many of the difficulties now met with will disappear on the construction of railroads, and that a great trade with Southern and Western China will follow the Red River to the sea. It is proposed to construct a line of rail from Laokai near Yunnan to Hanoi to obviate the difficulties experienced by junks in the shallow and almost unnavigable headwaters of this stream.

It is, however, incredible that Tonquin can ever be made a profitable investment of the immense sums expended.

### Merchant Marine of Germany.

CONSUL FAY.

ACCORDING to the official statistics of the German empire, the number of sailing vessels on January 1, 1886 (no later date mentioned), sailing under the German flag was 3,471; of these 1,688, or 48.1 per cent., were over twenty years in service, whereas in 1881 only 34.5 per cent., or 1,474, out of a total of 4,246, had seen the same service; of the remaining 1,783 on January 1, 1886, 21 per cent., or 732, were under ten years in service; in the year 1881 26 per cent., or 1,113, were of the same age.

Of late years the Germans have been building unusually large sailing vessels. On account of bitter competition the freight rates have become so reduced that smaller vessels pay no profits to the owners.

In the year 1885 there were launched 10 sailing vessels of 10,729 register tons; 1 full-rigged ship of 1,506 tons, and 8 barks of 8,192 tons, whereas only 14 smaller vessels were built, with a total of 1,624 register tons.

The building of steamships was limited in the same year to 23 screw steamers, with a total of 10,081 register tons, and 4 paddle steamers of 697 tons. This shows plainly that the measurement of the newly built sailing vessels exceeds that of the screw vessels which were constructed in the same year.

About nine sailors are requisite for a sailing vessel of 200 to 300 register tons, but a vessel five times the size, namely, 1,000 to 1,600 tons, does not require five times as many men, only twenty-two being the required number.

If one considers the savings of large vessels in the crew, in the construction of the hull, in the rigging, repairing, &c., it is explainable that in our time of low freight rates these large vessels still leave a profit and, in consequence of it, the building of them has not ceased, notwithstanding the large number already in existence, but is still going on.

The large vessels, as already stated, pay a small percentage on the present rates of freight, whereas the smaller ships cannot compete with them without being the losers, and at the present time there is no probability of an advance in the tariff, which is poor consolation for ship-owners.

Should there be an advance, the cargoes would rapidly decrease, partly because a great many goods cannot bear a higher cost, and partly because the railways are constantly on the lookout to increase their traffic, as they are now, with the present rates, dangerous competitors.



## Foreign Notes.

### Brazil.

F. W. Winkel reports from Bahia, May 28, that during the fortnight prices of sugar had been tolerably well sustained, some 18,000 bags selling at 1,160 reis, No. 7 to 7½, and 1,000 bags yellow crystals at 1,600. Small lots of cocoa brought 8,500 reis, and while 8,000 is offered for larger lines, holders decline selling below 9,000. Of rosewood there was hardly any stock left, and redwood was nominally worth 600@650 reis. Exchange, 22½d.

Borstelmann & Co.'s sugar report from Pernambuco, May 31, states that since April 30 only 25,000 bags Americanos had been sold at 1,300@1,350 reis, and that the market closed weak, with a stock of 15,000 bags. Since October 1 there had been shipped altogether 125,255 tons, against 84,796 the previous year. From exports there were taken for New York 6,000 bags fair Rio Grande at 1,250 reis. Exchange, 22½d.

Coffee shipments from Rio to the United States, from July 1 to May 31, amounted to 1,884,883 bags, against 2,324,400 the previous year, and from Santos to 530,917, against 426,050.

### China.

E. B. Drew, the secretary of the Department of Customs Revenue in China, has just published particulars of Chinese foreign trade in 1886, as compared with 1885 and previous five years. From the tables furnished it appears that the net import last year was 87,476,000 Haikwan taels, equaling \$1.45 American gold, against 88,200,000 in 1885, and the export 77,208,000 taels, against 64,904,000 :

#### IMPORT INTO CHINA.

	1886.	1885.
Opium .....	24,988,000	25,436,000
Cotton goods and twist .....	29,048,000	31,496,000
Woolens .....	5,632,000	4,824,000
Metals .....	5,316,000	5,500,000
Sundries .....	22,492,000	20,944,000
Totals .....	87,476,000	88,200,000

#### EXPORTS.

	1886.	1885.
Silk .....	28,836,000	20,000,000
Tea .....	33,504,000	32,268,000
Sundries .....	14,868,000	12,636,000
Total .....	77,208,000	64,904,000

The exports of raw silk increased from 60,000 piculs in 1885 to 64,500 in 1886, and of silk waste from 30,000 piculs to 45,500. The tea export was 2,217,295 piculs, against 2,128,751 in 1885.

#### MARITIME MOVEMENT IN CHINA.

##### VESSELS ENTERED AND CLEARED.

	Number of vessels.	Tons.
1883 .....	18,807	11,983,591
1884 .....	22,970	15,874,352
1885 .....	23,440	18,068,177
1886 .....	28,244	21,758,760

#### REVENUE COLLECTED AT MARITIME CUSTOM-HOUSES.

	1886.	1885.
1878 .....	12,483,988	14,472,766
1885 .....	15,144,678	

The railroad from Pekin to Tientsin is positively to be built, but the government will undertake the work itself. The steel rails will be ordered in equal amounts from Germany, Belgium, France and England.

### Cochin China.

Behre & Co. write from Saigon, under date May 15, about rice, that the decline in Hong Kong had met with a prompt response in paddy, which gave way 8c. to 9c. per picul, but that cleaned rice was not adversely influenced, the mills being under large engagements ahead. The decline at Hong Kong was due to favorable crop prospects in the province of Canton and the ample stock at Hong Kong. Total shipments of paddy and cleaned rice so far in May 457,035 piculs, against 491,718 the latter half of April, and 542,445 the fore part of April. Prime and white rice was selling at \$2.35 per picul. The market was well supplied with cotton at \$4.25 per picul, not ginned. Black pepper was arriving from the interior in small lots, selling at \$20.25@20.75 per picul. Hides were steady at \$9@10 for buffalo, and \$15.25@19.25. Cow-horns were neglected but steady; 3½-lb. horns at \$12.40; 3-lb. horns at \$11.75, and 2½-lb. at \$10.60. Exchange, four months' sight on Paris, 4 frs. per dollar.

### Chili.

Official returns of Chilean foreign trade in 1886 have just been published at Santiago, according to which the export, including specie and bullion, has reached \$51,239,149, being \$20,474 less than in 1885; mineral products amounting to \$40,264,340, being \$1,785,331 less than in 1885; agricultural ditto, \$9,710,747, being \$1,783,401 more; manufactures, \$172,900, being \$31,000 more, and specie and bullion, \$644,416, being \$3,138 less. The decrease in the value of minerals was chiefly due to the decline in prices, thus the falling off in nitrate of soda was \$1,424,075. In agricultural, &c., products there was an increase under the head of wheat of \$917,514, under wool, \$425,816.

Talcahuano and Concepcion are becoming more and more important and many new import firms have of late been established there. The province of

Aranco is also attracting attention since the Indian lands there have been thrown open to settlement.

### Egypt.

The General Product Association of Alexandria has gathered thorough information about this year's cotton crop in Egypt, whose area will be about the same as last year, while the young plants are in a sound and flourishing condition everywhere. There has been no complaint about insufficient inundation from the Nile this year.

### Ecuador.

Reyre Brothers & Co., Guayaquil, report, under date June 17, that during the first fortnight of the month cocoa arrivals reached 18,000 quintals, making total receipts 177,000 quintals since January 1. During the first five months the receipts amounted to 158,080 quintals, against 223,414 in 1886, 75,878 in 1885, and 96,761 in 1884. In spite of the heavy shipments there still remained a stock on hand of 25,000 quintals, which remained unsold because speculation had driven prices to such a high point that they could not be touched for either Europe or the United States. All demand having ceased the price of Arriba gave way to \$23.50, with a further decline in prospect. Machala cocoa was coming in sparingly and held at \$19, which was also considered very high: a year previous it brought \$15, and it is not believed this year's crop will fall short of last year's. Ivory nuts continued in active request at \$5.25. There had been shipped since January 1 95,629 quintals, against 39,047 same time last year, 44,495 in 1885, and 27,954 in 1884. Exchange on New York, 36 per cent. premium.

### France.

The warm weather, the *Journal des Fabricants de Sucre* states, has during June more than made amends for the rains and low temperature in spring, and the beet-root sugar crop of France now promises well. Seedlings have exceeded those of 1886 by 10 per cent., so that French domestic sugar production will probably reach 555,000 tons, while in all Europe the 1887 crop is estimated at 2,570,000 tons, against 2,658,500 in 1886. The duty question in France has now been settled by an increase of 10 frs., with a yield of 7 per cent. for the growing crop, 7½ per cent. for 1888-9, 7½ per cent. for 1889-90 and 7¼ per cent. for 1890-91. Toward the close of June the visible supply in Europe and America was, Cuba included, 1,079,204 tons, against 1,228,148 in 1886. White, No. 3, was worth 33.25 in the Paris market, against 34.25 in 1886, and 48 in 1885.

Vintage prospects were highly promising in France at the end of June; the vines have seldom looked better, and there was till then no complaint about the mildew, against which extensive preparations had been made. Silk crop prospects were also reassuring in France and Italy.

### Germany.

Parliament has reduced the drawback on raw sugar from 18 marks to 17.25; on hard dry refined from 20.80 to 21.50, and on other refined from 20.80 to 20.15, while the duty on roots remains 1.70 marks. For next year the duty will probably be 1 mark on roots, with a drawback of 10 marks on raw, 12.50 and 11.70 in the two classes of refined, and extra duty on home consumption.

The Spirit Tax bill, which passed pretty much as framed by the committee, extends a great advantage to the country distilleries, the only ones whose stock of spirit is large and probably aggregates 1,000,000 hectolitres, inasmuch as a drawback or bounty is allowed on exportation from July 1 to October 1 of something like 35 marks the hectolitre. The surtax of 30 marks was the cause of wild speculation and a sudden rise of 20 marks.

The wool market at Posen being practically at an end the few parcels of goods which have hitherto proved unsuccessful were rapidly disposed of. Of unwashed wools considerable quantities remained unsold, the price demanded being too high. Several lots of better wools arrived and were immediately bought up. Large quantities of stocks have also been purchased by the manufacturers. The Posen wholesale dealers made larger purchases in the market than they did last year. The following prices were paid: Fine domonial wools, 170 to 185 marks; middling fine, 150 to 160 marks; rustical wools, 115 to 120 marks; unwashed wools, 50 to 57 marks. The wool market having been finally concluded it was ascertained that 216 centners fine, 4,315 centners middling and 2,541 centners ordinary wools, together 15,434 centners, were placed, against 17,443 centners last year.—*Kuhlows*.

Several years ago the "Holsteinische Oelgruben-Gesellschaft" was established in Hamburg to obtain the petroleum which had been discovered in various parts of Holstein. A good deal of interest in this venture was shown, not only in Hamburg, but also in other parts of Germany. At the end of June an extraordinary general meeting of the shareholders was to be held for the purpose of winding up the company's affairs.

The Chamber of Commerce and Industry at Augsburg will petition against the projected increase of 6 marks upon the incoming tax of cotton-seed oil. The soap manufacturers who employ this oil are already hard pressed by English competition. Instead of an increase the Chamber of Commerce recommends a decrease in the tax of 4 to 2 marks.

The Society United German Petroleum Works has made a new deep boring, sixty metres deep, which produced 7 barrels of crude oil in twelve hours valued at 175 marks.

### Holland.

The *Nederlandsche Courant*, in its monthly coffee review of the latter part of June, remarks that one of the chief causes precipitating the break in the staple



has no doubt been the decreased consumption in the United States since January 1, in consequence of the excessively high prices. The American movement during the first four months exhibits the decrease referred to:

	1887.	1886.	1885.	1884.	1883.	1882.
Import into the United States.....tons.	77,465	81,244	80,467	63,065	66,060	65,504
Consumption.....	68,677	83,831	84,013	68,022	64,886	65,195
Re-exports.....	168	242	27	61	4,321	3,407
Deliveries.....	68,845	84,073	84,040	68,983	69,207	68,602
Stock, May 1.....	29,845	30,860	34,274	33,541	21,006	22,483

In Europe, on the other hand the deliveries had remained steady.

Import during the first four months:

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	145,360	132,640	174,440	148,190	105,420	162,360
America.....	77,465	81,244	80,467	63,065	66,060	65,504
Totals.....	222,825	213,884	254,907	211,255	261,480	227,864

#### DELIVERIES.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	139,360	138,390	136,790	110,940	160,770	126,110
America.....	68,845	84,073	84,040	68,983	69,207	68,602
Totals.....	208,205	222,463	220,830	179,923	229,977	194,712

#### STOCK MAY 1.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	115,800	162,800	180,250	189,250	149,450	145,300
America.....	29,845	30,860	34,274	33,541	21,006	22,483
Totals.....	145,645	193,660	214,524	222,791	170,456	167,783

To the stock the unsold supply in the hands of the Netherlands Trading Company has to be added, in bags of 134 lbs. net: 1887, 213,113 bags; 1886, 337,800 bags; 1885, 632,900 bags.

The government has ordered the Governor of Surinam not to collect the export duty on shipments of sugar, molasses and rum made this year from February 17 to December 31.

### India.

Official returns have been published of the wheat shipments made from British India during the fiscal year ended March 31 last, as compared with the previous two fiscal years, reduced to thousands of cwts. They are as follows:

	1884-5.	1885-6.	1886-7.
To England.....	7,445	12,071	9,668
Belgium.....	1,739	2,602	2,404
France.....	3,312	2,145	2,803
Holland.....	134	86	207
Italy.....	701	1,218	5,212
Spain.....	94	270	175
Egypt.....	2,149	2,296	1,318
Arabia.....	58	154	152
Other countries.....	199	158	314
Total.....	15,831	21,060	22,253

The decrease to England and a remarkable increase to Italy will be noticed.

The total imports into India increased from 518,110,000 rupees in 1886 to 586,960,000 rupees during the fiscal year 1887, and the export from 807,350,000 to 849,180,000; hence the total foreign trade of the country reached 1,416,140,000 rupees, being 110,670,000 rupees greater than the previous fiscal year.

### New Zealand.

Following is the Kauri gum report of R. & W. R. Walker, Auckland, April 25: Since March 28, when last reported, quite a decrease in production has been noticeable, and there will be no change in this respect till prices become more remunerative again. We quote crude gum, poor to medium, £38 to £43 per ton; fair to good, £45 to £48, and East Coast, £55 to £58. Superior lots will bring a higher range. Receipts for four weeks, 437 tons. Meanwhile the Kaikoura sailed for London with 75 tons on board, the Abel Abbott with 459 tons for New York, and the Mariposa with 6 tons for San Francisco. Stock in hand 725 tons. On the berth for New York there is the H. Bauer, to sail in about a month from now, say, about the end of May.

### Russia.

The import duty upon sewing and knitting yarn has been fixed at six gold rubles per pood, gross weight.

### South Africa.

On opening the Cape Parliament in June the Governor-General, Sir Hercules Robinson, expressed himself very favorably about the finances of the colony. He stated that notable savings would enable the government to square the budget without lowering the salary of a single officer in its employ. He remarked that railroad earnings were greater than ever, and that the government seriously contemplates prolonging the railroad through the Free State to the Transvaal Gold Fields; that, furthermore, it has taken into serious consideration the demand of those states to share in the duties collected at the ports. He wound up by declaring that the aim of the government was the creation of a South African customs union.

Poppe, Schunhoff & Gutterz report about grease wool from Port Elizabeth, May 28, that long staple superior lots were readily bought for America and Bradford, but that full rates had to be paid for this kind of wool, which only arrives sparingly. There had besides prevailed an active demand for grease wool for scouring purposes, light quality bringing 5d.@5½d., and heavy, faulty lots 3½d.

@4½d. Low greasy qualities were wanted at 3½d.@3¼d.; country scoured brought 7d.@7½d., and Uitenhages at 8d.@8½d. Exchange, 90 days' sight, 2 per cent. discount.

### Spain.

A portion of the Spanish wine region suffered from the night frosts during the spring, but the weather has been so propitious to the vines in all June, a tropical heat alternating with an abundant rainfall, that blossoming has proceeded normally, and there is every prospect at present that the next vintage will again prove above the average in point of yield. Meanwhile the wine trade in most wine districts had come to an almost complete standstill, and 75 per cent. of the 1886 wines remain unsold and are to be had at ruinously low prices, the export demand continuing slack. As many of these wines will not keep through the hot summer season they will have to be distilled into brandy. There is much complaint in the Spanish agricultural regions about the low prices at which farmers have to sell their products, and a clamor for protective duties in grain and cattle of something like 40 per cent.

### Tonquin.

The new Franco-Chinese commercial treaty stipulates that China is to have the right of importing opium across the French frontier into Tonquin, and that the Paklung Peninsula is to be ceded to China. In return for these privileges, China renounces for the present the appointment of Chinese consuls in Tonquin.

France has resolved, in order to avoid confusion, to strike Tonquin from the French budget for 1887. Up to August 31, 1887, there will have been spent for and in Tonquin 60,000,000 frs., and this amount is to be squared by a Tonquin loan, under the guarantee of France. The hope is expressed that the revenues to be derived from the new colony may soon obliterate this debt on account of it.

### Victoria.

Following is the yield of the wheat crop in two of the leading Australian colonies:

	Area seeded. Acres.	Yield per acre.	Crop harvested. Bushels.
Victoria.....	1,052,685	11½	12,100,036
New South Wales.....	337,669	17½	5,995,159
Totals.....	1,390,354	Av. 14½	18,095,195

Showing an excess of 10,000,000 bushels over the production of 1886. In New South Wales during harvest time the wheat suffered a good deal from the rains, whereas in Victoria and South Australia the crop was secured in fine condition. Victoria will be able to spare Europe 800,000 cwts. and South Australia 1,030,000.

With the exception of the western districts of Victoria, where there has been a lack of rain, the prospects for the coming wool clip are all that could be wished throughout the Australian colonies.

### West Indies.

TRINIDAD.—Port of Spain, May 27.—E. P. Masson reports the sugar crop drawing to a close, having been one of the largest ever secured. Shipments to date amounted to 16,232 hogsheads, 6,350 tierces and 238,665 bags and barrels, against 10,944 hogsheads, 5,619 tierces and 133,985 bags and barrels in 1886. Prices offered for molasses were so low that planters preferred shipping the same on consignment.

Cocoa had been coming in more abundantly and met with a good demand at rising prices, common quality bringing as much as \$15.50@16 the tanega. Rain and sunshine alternating, the weather was about as favorable as it could be for blossoming. Shipments to date amounted to 33,522 bags, against 48,174 last year and 50,484 in 1885—bags of 170 pounds net.

The asphaltum market was steady; refined \$9 per ton, and crude \$3. Shipments to date amounted to 11,202 tons, against 11,806 last year and 12,768 in 1885. Exchange on London, colonial bank bills, ninety days' sight, \$4.80.

HAYTI.—Port au Prince, May 13.—The government has raised the export duty on coffee \$1.20 gold the 100 pounds, which, added to the duty hitherto levied of \$2.15, now constitutes a total export duty of \$3.36. In consequence of the drought logwood was arriving slowly from the interior, so that the vessels expected to load for the Baltic are likely to wait a long time for cargo.

CUBA.—The budget for 1887-8 fixes the outlay at \$22,862.54, being \$3,097,194 less than the previous fiscal year, and the income is estimated at \$23,273,100, being \$410,551 in excess of the preceding year, in spite of a \$2,721,625 reduction of revenue through the abolition of export duties.

On July 4 the sugar market at Havana and other leading points in Cuba was quiet, in sympathy with London and New York, with a sale at Matanzas of 5,600 bags centrifugal 25½° at \$2.71 gold per quintal. Stocks at Havana and Matanzas on July 1, 26,000 boxes, 757,000 bags and 7,700 hogsheads.

On June 21 the Department of State at Washington was informed by Minister Curry at Madrid that the commercial arrangement between the United States and Spain, by which equality of treatment of American and Spanish vessels was secured in the ports of Cuba and Porto Rico, is extended till December 31 next. The announcement was made public in view of the anxiety of certain importers in New York who were led to believe that the agreement would expire on June 30.



# Review of the Markets.

## Reports for the Month Ended July 1.

**Butter.**—The market on all extra grades rules firm, with now and then a sale made at a slight advance on quotations. The demand, however, is rather moderate and mainly for fine to extragrades. State dairy is in light receipt. The best imitation creamery is firm, with a fair demand. Factory quiet, but firm. We quote: Creamery,  $15\frac{1}{2}$ @20c.; State dairy, new,  $15\frac{1}{2}$ @19c.; Western,  $10\frac{1}{2}$ @16c.

**Cheese.**—There is a good demand and the market is strong and better. Best colored closed at  $9\frac{1}{2}$ @9c., and white at  $8\frac{1}{2}$ @9c. We quote: Factory, best white,  $8\frac{1}{2}$ @9c.; do., best colored,  $9\frac{1}{2}$ @9c.; do., good,  $8\frac{1}{2}$ @8c.; night skims, medium,  $5\frac{1}{2}$ @5c.; do., prime,  $6\frac{1}{2}$ @6c.; Ohio factory, fine,  $7\frac{1}{2}$ @7c.; do., fair,  $6\frac{1}{2}$ @6c.

**Coffee.**—Speculation in Brazil grades has been of a subdued character and the market has presented a tame and quiet aspect. At the close transactions on spot were on the basis of  $17\frac{1}{2}$ c for No. 3, but very little disposition to trade was shown. The monthly Rio coffee statement of William Scott's Sons is as follows:

Stock in warehouses June 1, 1887.....bags. 396,320  
Received since  
At New York.....bags. 202,431  
Baltimore.....2,000

Total supply.....601,001

Delivered from warehouses since—  
At New York.....bags. 78,626  
Baltimore.....18,583  
New Orleans.....5,950

Stock in warehouses July 1, 1887—  
At New York.....bags. 446,212  
Baltimore.....30,180  
New Orleans.....21,450

Total stock.....497,842  
Afloat and loading for United States to June 2.....74,516  
Purchased for United States to June 30 (35,000 bags Santos).....91,000

Total visible supply July 1, 1887.....bags. 683,358  
In mild coffees East India grades have ruled quiet and steady. For interior Padang  $22\frac{1}{2}$ c has been bid, but sellers ask  $23\frac{1}{2}$ c. this year. West India grades have received some attention, with sales of 500 bags Maracaibo from second hands at  $18\frac{1}{2}$ c., and 2,500 bags do. at a shade less; but the majority of holders are unwilling to accept bids on this basis. We quote: Rio, ordinary cargoes, per pound,  $17\frac{1}{2}$ @ $17\frac{1}{2}$ c.; fair do.,  $17\frac{1}{2}$ @ $18\frac{1}{2}$ c.; good do.,  $18\frac{1}{2}$ @ $18\frac{1}{2}$ c.; prime do.,  $18\frac{1}{2}$ @ $18\frac{1}{2}$ c. Santos, fair to good cargoes,  $17\frac{1}{2}$ @ $18\frac{1}{2}$ c.; Java,  $20\frac{1}{2}$ @ $21\frac{1}{2}$ c.; Singapore, —@—c.; Ceylon,  $19\frac{1}{2}$ @ $20\frac{1}{2}$ c.; Maracaibo,  $18\frac{1}{2}$ @ $20\frac{1}{2}$ c.; La Guayra, —@—c.; Jamaica, —@—c.; San Domingo, —@—c.; Porto Rico, —@—c.; Central America,  $18\frac{1}{2}$ @ $22\frac{1}{2}$ c.; Mexican,  $19\frac{1}{2}$ @ $22\frac{1}{2}$ c.; Angostura, —@—c.; Savanilla,  $19\frac{1}{2}$ @ $21\frac{1}{2}$ c.; Mocha,  $24\frac{1}{2}$ @ $26\frac{1}{2}$ c.

**Cotton.**—"Spot" has been in fair request, in good part for export and prices closed  $\frac{1}{8}$ c. higher, middling being quoted  $11\frac{1}{2}$ - $16\frac{1}{2}$ @ $11\frac{1}{2}$ c. The movement in options has been slow and prices irregular, although generally higher. Closing figures were: July,  $10.90$ @ $10.91$ c.; August,  $11.02$ @ $11.03$ c.; September,  $10.38$ c.; October,  $9.91$ @ $9.92$ c.; November,  $9.78$ @ $9.79$ c.; December,  $9.77$ @ $9.78$ c.; January,  $9.80$ @ $9.81$ c.; February,  $9.86$ @ $9.88$ c.; March,  $9.93$ @ $9.94$ c.; April,  $9.99$ @ $10.01$ c.; May,  $10.05$ @ $10.06$ c.

**Drugs and Chemicals.**—The market as a whole has been livelier, although job lots have been taken chiefly. Closing prices were: Bleaching powders,  $\$1.87\frac{1}{2}$ @ $1.92\frac{1}{2}$ ; caustic soda,  $\$2.47\frac{1}{2}$ @ $2.50$ ; soda ash,  $\$1.27\frac{1}{2}$ @ $1.30$ , and sal soda,  $97\frac{1}{2}$ @ $98\frac{1}{2}$ ; acetic acid,  $2\frac{1}{2}$ @ $2\frac{1}{2}$ c.; oxalic acid,  $8\frac{1}{2}$ c.; citric acid,  $50\frac{1}{2}$ @ $51\frac{1}{2}$ c.; tartaric acid,  $43\frac{1}{2}$ @ $45\frac{1}{2}$ c. for crystals; acetate of lime,  $1.80$ @ $1.85$ c. for brown; aloes,  $6\frac{1}{2}$ @ $7\frac{1}{2}$ c. for Cape and  $11\frac{1}{2}$ @ $12\frac{1}{2}$ c. for powdered; alum,  $\$1.75$ @ $1.87\frac{1}{2}$  for lump and  $\$1.50$ @ $1.52$  for ground; ammonia carbonate,  $8$ c. for English; assafetida,  $40$ @ $40\frac{1}{2}$ c.; arnica flowers,  $7\frac{1}{2}$ @ $10$ c.; albumen,  $15\frac{1}{2}$ @ $16$ c. for foreign blood; arsenic,  $30\frac{1}{2}$ @ $31\frac{1}{2}$ c.; balsam copaiva,  $42$ @ $50$ c.; balsam tolu,  $30\frac{1}{2}$ @ $35$ c.; balsam Peru,  $\$1.15$ @ $1.20$ ; bichromate of potash,  $10\frac{1}{2}$ @ $10\frac{1}{2}$ c. for Scotch; borax,  $6\frac{1}{2}$ @ $6\frac{1}{2}$ c. for refined in bbls.; blue vitriol,  $4\frac{1}{2}$ @ $5\frac{1}{2}$ c.; brimstone,  $\$19.75$ @ $20$  for seconds; buchu leaves,  $7\frac{1}{2}$ @ $10$ c. for shorts and  $24$ @ $25$ c. for longs; cantharides,  $\$1.85$ @ $1.95$  for Russian; camphor, refined,  $28$ c.; castor oil,  $17\frac{1}{2}$ @ $18$ c. in bbls. and cases; cardamoms,  $6$ @ $8$ c. for Aleppo and  $75$ @ $81$  for Malabar; cassia buds,  $10$ @ $10\frac{1}{2}$ c.; camomile flowers,  $12$ c. for Roman and  $15$ @ $16$ c. for new German; cutch,  $7\frac{1}{2}$ @ $8$ c.; chlorate of potash,  $15\frac{1}{2}$ @ $15\frac{1}{2}$ c. for crystals and  $15\frac{1}{2}$ @ $15\frac{1}{2}$ c. for powdered; cochineal,  $30$ @ $31$ c. for Teneriffe silver; cream tartar,  $34\frac{1}{2}$ @ $35$ c. for crystals and  $35$ @ $36$ c. for powdered; gambier,  $5\frac{1}{2}$ @ $5\frac{1}{2}$ c.; ginger,  $16$ c. for Jamaica bleached and  $11$ @ $12$ c. for unbleached; glycerine,  $21$ @ $25$ c.; Guarana,  $\$1.35$ @ $1.45$ ; iodide of potash,  $\$2.85$ ; ipecacuanha,  $\$2.25$  for whole, and powdered  $\$2.25$ @ $2.30$ ; licorice paste,  $28$ @ $29$ c. for P. & S. and  $28$ @ $29$ c. for Corigliano; manna,  $50$ @ $55$ c. for small flake and  $80$ @ $85$ c. for large flake; morphine,  $\$3.25$  for domestic; opium,  $\$4.30$ @ $4.40$  for new, duty paid; oil cloves,  $\$1.70$ @ $1.85$ ; oil cassia,  $6\frac{1}{2}$ @ $7\frac{1}{2}$ c.; oil anise,  $\$2$ ; oil lemon,  $\$1.65$ @ $1.85$ , as to brand; oil sassafras,  $34$ @ $36$ c.; oil wintergreen,  $\$1.65$ @ $1.70$ ; oil bergamot,  $\$1.65$ @ $1.90$ ; oil peppermint,  $\$2.60$ @ $2.75$  in tin and  $\$3.50$ @ $3.60$  in glass; prussiate of potash,  $18\frac{1}{2}$ @ $19$ c. for American yellow; quicksilver,  $51$ @ $52$ c.; quinine,  $44$ @ $45$ c. for German and  $47$ @ $58$ c. for American; roots,  $4\frac{1}{2}$ @ $5$ c. for gentian; Seneca root,  $36$ @ $47$ c., and Colombo root,  $80$ @ $100$ c.; ginseng,  $\$1.65$ @ $2$ ; sarsaparilla,  $7\frac{1}{2}$ @ $9$ c. for Mexican; seeds,  $8$ c. for Trieste brown mustard and  $4\frac{1}{2}$ @ $4\frac{1}{2}$ c. for California yellow; senna,  $32$ @ $32\frac{1}{2}$ c. for Alexandria; shellac, for D. C.  $17$ @ $17\frac{1}{2}$ c. per lb.; V. S. O.,  $13\frac{1}{2}$ @ $14$ c. per lb.; I in diamond,  $13\frac{1}{2}$ c. per lb.; sticklac, —c. per lb.; sugar of lead,  $5\frac{1}{2}$ @ $5\frac{1}{2}$ c. for brown and  $12$ c. for white; tonka beans,  $\$1.35$ @ $1.50$  for Angostura.

**Dry Goods.**—While business in woollens has not been up to the expectations of the manufacturers, yet on the whole it has been very fair. In departments for women's wear there has been more business than for men's wear. Fine wool fabrics, including those classed as worsteds, are well conditioned as to orders against the

production. Solid colored wool goods, or those classed as worsteds, were interrupted early in the season, but latterly there was an improved business. Medium grades of wool cassimeres were alike adversely affected, but have not recovered therefrom. Specialties in the way of fancy cassimeres and ladies' cloakings are well supplied with orders, but where mills have continued to run in antediluvian ruts curtailment of production or an indefinite stoppage has resulted in preference to the accumulation of undesirable fabrics. There is ample opportunity for diversification of production, and unless more generally adopted a large stoppage is the inevitable result. Overcoatings of all qualities are well in hand, but some makes and styles more so than others. Satinets are similarly conditioned according to desirability of qualities. Doeskin jeans were quiet in demand, but did well through deliveries. Jersey cloths and jerseys of desirable qualities and styles are well provided with orders. Fancy knit woollens are well sold ahead. Underwear is unchanged as to the character of orders against the output, and any mills well handled are in good shape, especially those in the hands of commission merchants alive to the qualities, styles, colors and finish most desirable with consumers. Shawls and skirts have been looked after, but no general business is reported. The mills are well occupied in the execution of orders for cotton goods, and with a wide distribution of receipts, especially of staple, colored and fancy cottons, everybody appears to be well satisfied. Exporters are not showing much activity, but the inquiry is of reasonable proportions. Printing cloths have quieted down somewhat, but quotations are very steady at  $3\frac{1}{2}$ c. for  $64\times64$  cloths, and  $3$ c. for  $56\times60$  cloths. Prints have had considerable attention. Narrow and wide goods have shared favors and in a quiet way a large business has been effected. Dress goods have been in good movement in the execution of orders, and in some qualities the production is under control of orders through to September. Gingham were in steady and wide distribution, as the result of orders lodged against the production, which far exceeds anything done for any previous autumn season. All the prominent makers report production well covered by orders, which means a healthy trade in sight.

**Freights.**—A little easier feeling in grain freights, as a consequence of a slight let-up in the outflow, is about the only change there is to record. The offerings of miscellaneous freights continue moderate, and there has occurred no change worthy of note. Grain charters are rather quiet, and extreme rates are not quoted,  $35$  being the maximum. Deal vessels are in limited request, while tobacco and naval stores are entirely neglected. In the way of oil charters and freights there is nothing new, and old rates still obtain, although the tendency slightly favors the shipper. Lumber vessels for the River Plate are moderately sought after, but obtain former rates. The West India trade continues largely controlled by steamers, hence the few vessels taken in that direction. The sugar business from Cuba remains quiet, while that of logwood is beginning to fall off. Coastwise lumber vessels are receiving a little more attention, and in most cases have obtained former rates. Colliers are in better request, but large vessels have accepted ten cents below the association rates.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provis. na.	Cheese.	Beef.	Pork.	Cotton.
Liverpool	$2\frac{1}{2}$	6.3	7.6	8.9	$10.00$ @ $12.6$	25.	$1.90$ @ $2.0$	1.6	3-32d.
London ..	$3\frac{1}{2}$	10.	10.	10.	15.	20.	3.	2.	....
Glasgow ..	3 asked.	7.6	7.6	7.6	$12.6$ @ $20.$	30.	3.	2.	....
Bristol ..	$3\frac{1}{2}$	10.	10.	11.3	15.	22.6	3.	2.	....
Leith .....	$3\frac{1}{2}$ @ $3\frac{1}{2}$	11.3	12.6	12.6	$17.6$ @ $20.$	25.	3.6	2.3	....
Hull .....	$3\frac{1}{2}$ @ $3\frac{1}{2}$	10.	12.6	12.6	$17.6$ @ $20.$	25.	4.	3.	....
N'wcastle	$3\frac{1}{2}$ @ $3\frac{1}{2}$	10.	12.6	12.6	$17.6$ @ $20.$	25.	4.	3.	....
Antwerp ..	3	10.	12.6	15.	$15.00$ @ $17.6$	....	3.6	2.6	7-64.
Hamburg ..	55	..	..	80 pf.	....	....	....	....	5-32d.
Bremen .....	70	..	..	1m.	....	....	....	....	11-64d.
Copenhagen	28.6d.	..	..	22.6	....	....	....	....	....
Marseilles ..	35.6d.	..	..	$17.6$ @ $22.6$	....	....	....	....	....

Cork for orders, sail,  $35$ @ $35.4\frac{1}{2}$ d. Steam,  $25$ . 9d. Direct port, United Kingdom 3d. to 6d. less.

### OIL QUOTATIONS.

	Refined Petroleum.	Naphtha.	Cases.
Cork and United Kingdom...	$2.00$ @ $2.9$	$2.3$ @ $3.$	Levant..... $14$ @ $16$
Direct port, United Kingdom.	$2.00$ @ $2.3$	$2.1\frac{1}{2}$ @ $2.6$	Adriatic..... $15.$
Direct Continent.....	$2.00$ @ $2.3$	$1.1\frac{1}{2}$ @ $2.6$	Mediterranean. $14.$
Baltic.....	$2.30$ ...	$2.60$ ...	

**Fruits.**—Foreign fruits have been in rather light movement, and transactions have been mostly of job lots. Prices, however, are steady. We quote: Valencia raisins  $5\frac{1}{2}$ @ $6\frac{1}{2}$ c.; loose muscatel,  $\$1.22\frac{1}{2}$ @ $1.32\frac{1}{2}$ ; London layers,  $\$1.40$ @ $1.45$ ; Sultana,  $7\frac{1}{2}$ @ $8$ c.; Ondara layers,  $7\frac{1}{2}$ @ $7\frac{1}{2}$ c. Almonds—Princess, paper shelled,  $20\frac{1}{2}$ c.; Sicily, shelled, —c.; Jordan,  $40$ c.; Tarragona,  $14$ @ $14\frac{1}{2}$ c.; Ivica,  $14\frac{1}{2}$ @ $14\frac{1}{2}$ c.; Languedoc,  $14$ c.; French sardines,  $9$ @ $11$ c. for quarter boxes and  $15$ @ $17$ c. for half boxes. Citron,  $17\frac{1}{2}$ c. Currants,  $5\frac{1}{2}$ c. Figs,  $8\frac{1}{2}$ @ $12$ c. Turkey prunes,  $3\frac{1}{2}$ c.; French prunes,  $6\frac{1}{2}$ @ $7\frac{1}{2}$ c. Grenoble walnuts,  $13\frac{1}{2}$ @ $13\frac{1}{2}$ c.; French, do.,  $7\frac{1}{2}$ @ $8$ c.; Naples do.,  $12\frac{1}{2}$ c. Sicily filberts,  $6\frac{1}{2}$ @ $7$ c.; Naples, do., —@—c. Dates,  $4\frac{1}{2}$ @ $4\frac{1}{2}$ c. for Persian in boxes, and  $4$ @ $6\frac{1}{2}$ c. Brazil nuts,  $5\frac{1}{2}$ @ $5\frac{1}{2}$ c.; Chili walnuts,  $6\frac{1}{2}$ @ $7$ c. In fresh fruit apples are quiet. We quote: Apples, per bbl.,  $\$2.50$ @ $3$ , do., Southern, per half bbl.,  $75$ @ $\$1.75$ ; do., do., per crate,  $50$ @ $\$1$ . Domestic dried fruits have little attention. Small lots are taken up at steady prices. We quote: Apples—Fancy evaporated, —@—c.; do., fair to good,  $14$ @ $15$ c.; do., State sliced,  $50$ @ $60$ c.; do., do., quarters,  $4\frac{1}{2}$ @ $5\frac{1}{2}$ c.; do., Ohio and Michigan quarters, bbls.,  $4\frac{1}{2}$ @ $5$ c.; do., old,  $2$ @ $3\frac{1}{2}$ c. Cherries, pitted,  $7$ @ $10$ c.; raspberries, evaporated,  $23$ @ $24$ c.; do., sun-dried,  $21$ @ $23$ c.; blackberries, prime,  $8$ c.; whortleberries,  $7$ c.; plums,  $5$ @ $5\frac{1}{2}$ c.

**Flour and Meal.**—The flour market is quiet and easy, although prices are unchanged. We quote: No grade,  $\$1.90$ @ $2.10$ ; fine,  $\$2.20$ @ $3$ ; supers,  $\$2.75$ @ $3.30$ ; extras No. 2,  $\$3.30$ @ $3.75$ ; extras No. 1,  $\$3.75$ @ $4.50$ ; clear bakers',  $\$3.90$ @ $4.10$ ; straight bakers',  $\$4.20$ @ $4.50$ ; patents,  $\$4.30$ @ $5$ ; city extras (European), in  $140$ -lb.



sacks, \$3.50@3.80; city West Indies, \$4.40@4.50; city patent, \$4.30@4.90. Southern flour continues in light demand but prices are unchanged. We quote: Fine, \$2.60@2.90; supers, \$3.15@3.25; extras, \$3.50@4; Richmond first, \$5@5.12½; Richmond second, \$4.62½; patents, \$4.75@5. Rye flour is dull and unchanged. We quote: Fine, \$2.20@2.30; superfine, \$2.85@3.10.

**Grain.**—The market for wheat options has been very quiet, and prices, while not materially changed, favor buyers. Closing quotations were: July, 84½c.; August, 84½c.; September, 85½c.; October, 86½c.; December, 89½c.; May, 1888, 95½c. "Cash" wheat has been less active, but prices have favored sellers. No. 2 red is virtually held out of the market—would probably bring 88c. for export. Sales comprise No. 2 Chicago spring at 83½@83¾c.; ungraded red winter, at 85@89c., and No. 2 in elevator, at 85½c. Corn options have ruled quiet and easy; prices are unchanged, and closed as follows: July, 45½c.; August, 46½c.; September, 48c.; October, 48½c. "Cash" has ruled dull, but prices have been lower, closing sales of No. 2 afloat being at 46½c. Oats—Options have been slow of sale; closing prices were: July, 31½c.; August, 32½c.; September, 32½c. "Cash" oats have been irregular, but closed firmer. Closing sales were at 38c. for No. 1 white, 37½@37¾c. for No. 2, 36½c. for No. 3, 34c. for No. 1 mixed, 33½@33¾c. for No. 2, 33c. for No. 3, 32c. for rejected, 35c. for No. 2 Chicago, 34@35c. for mixed on track, and 37@41c. for white on track.

**Leather.**—The best grades of Hemlock Sole have been in moderate demand, with values steady, but interior have met with only a limited demand, and with large stocks prices rule dull and weak. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 19@20c.; middle do., 20½@21c.; heavy do., 21@—c.; light seconds, 18@—c.; middle do., 19@—c.; heavy do., 19@—c.; damaged, all weights, 16@16½c.; common hide light, first selection, 18@—c.; middle do., 20@—c.; heavy do., 20@—c.; light seconds, 16½@17c.; middle do., 17@18c.; heavy do., 17½@18c.; damaged, all weights, 15½@16c.; rejects, 12@12½c.; acid hide of all kinds, light, first selection, 17½@18½c.; middle do., 20@21½c.; heavy do., 20@24½c.; light seconds, 16½@17c.; middle do., 17@18½c.; heavy do., 18@20½c.; damaged, all weights, 15@15½c. *Union Tanned*—Slaughter light backs, 20@30c.; middle backs, 28@30c.; middle backs, heavy, 28½@30c.; second backs, 26@27c.; light crop, —@27c.; middle crop, 25@27c.; crop seconds, 24@25c.; bellies, 13@14c. *Calcutta Buffalo*—Light, 16@16½c.; middle, 15@16c.; damaged, 14@15c.; poor damaged, 11@12c.

**Lumber.**—There is a fair trade doing, although, as is usual at this season, there is a disposition to curtail operations—temporarily, at least. This is particularly the case with Eastern Spruce. Of Yellow and White Pine, however, there has been a sufficient supply thus far, but managed well enough to prevent any shading of values for desirable grades. Hardwoods have been a little slow of late, but as a rule really desirable parcels secure appreciation and can be placed without any special sacrifice on the line of valuation. Lath meeting with a good demand and ruling steady, with \$2.25 per M average top rate for Eastern. Quotations are: Spruce, random cargo, \$17@18 per M feet; do., special cargo, \$18@19. White pine, South American shippers, per M feet, \$28@30; do., West India shippers, \$17@19; do., box boards, \$15@18. Yellow pine, random cargo, \$19@21; do., special cargo, \$20@22; do., green flooring boards, \$18@19; do., dry flooring boards, \$21@23; do., siding, \$21@24; do., cargoes f. o. b. Atlantic ports, rough, \$13@15; do., cargoes f. o. b. Atlantic ports, dressed, \$18@20; do., cargoes f. o. b. Gulf ports, rough, \$12@14; do., cargoes f. o. b. Gulf ports, dressed, \$19@21.

**Metals.**—Pig Iron—American pig has been very quiet the past few days, and nothing is apparent in the movements of either buyers or sellers suggestive of any change in the general situation. The Quaker City seems to have more or less alleged "good" No. 1 X foundry iron at \$20, but no brands that are popular in this vicinity can be picked up at less than \$21, while on prompt deliveries the figures are above that. No. 2 X foundry goes at \$19@20, and for gray forge \$17.50@18.50 is still quoted. Scotch pig has ruled firm, but the firmness has reached a point where there is a line of demarcation between the represented and the real article. Meanwhile sales are on a more restricted scale and the demand is smaller. We quote: \$20.50 for Eglington, \$20.75@21 for Dalmellington, \$21@21.25 for Glengarnock, \$21.50 for Gartsherrie, \$22@22.25 for Summerlee, \$22.25@22.50 for Shotts and \$22.50@22.75 for Coltness. Bessemer pig has shown no change. Some sales are making of domestic (mainly low grade) in a quiet way, but on foreign there is about \$1 margin between buyers' and sellers' views. Spiegeleisen has been without movement of importance, except in the form of delivery on old contracts. Prices are nominal at \$27@27.50 for 20 per cent. The steel-rail market has remained quiet. Not many lots have been under negotiation, and it is still the rule that difficulty is experienced fixing deliveries acceptably to both buyers and sellers. For what few lots there may be available for delivery prior to October about \$39@40 at Eastern mills or \$40.50 at tidewater is asked, while for more distant deliveries the range of \$38@39 is quoted. Owing to foreign competition, however, Southern business cannot be done at prices that will net over \$37.50 at Eastern mills. Old Rails—Figures are up a point and this has restricted business. Sellers ask \$23 for tees and \$24 for double-heads, lower bids being refused for spot lots. Wrought scrap iron is very quiet, and there is nothing moving except small lots from yard. Prices are nominal at \$21@22 for No. 1 from yard and \$20 for ship lots. Copper—Consumers are liberally supplied by deliveries on contracts, and there is an almost entire absence of demand or offerings. Lake on spot is quoted at 10.10@10½c. Lead—Pig lead has gone "off" a peg. We note sales at 4.55c. down to 4½c., and the market closed at the latter figure. Tin—Speculation has been fairly active, with transactions to the extent of about 200 tons at 23.15c. for spot, 22½@22.80c. for July, 22.65c. for August, and 22½@22.55c. for October delivery. The consumption continues heavy, however, and the final outcome depends in a good measure upon endurance. Spot prices at the close were: Straits, 23.10c. cash for five to ten ton lots, and 23½c. cash, 23½c. thirty days, for ordinary store parcels. English L. & F. about 23½c. cash, and Banca, 24c. nominal. Tin Plate—The spot trade has been of more moderate volume and negotiations on futures have been suspended until

after the holidays. Aside from about 10,000 boxes 18x20 cokes sold to oil packers the business has been light. Stocks are still in good shape, however, and prices very firm. Spot lots quoted as follows: Charcoal, ½ cross assortment, Melyn grade, \$5.15@5.20, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$4.65@4.70, each additional X add \$1; charcoal terne, M. F. grade, 14x20, \$6.25; M. F. grade, 20x28, \$12.87½@13; Worcester, 14x20, \$4.70; Worcester, 20x28, \$9.75; Dean grade, 14x20, \$4.25@4.30; Dean grade, 20x28, \$8.90@9; Allaway grade, 14x20, \$4.20; Allaway grade, 20x28, \$8.70@8.75; I. C. coke—B. V. grade, \$4.32½@4.35; J. B. grade, 14x20, \$4.40; I. C. Bessemer steel, squares, \$4.55 basis; I. C. Siemens' steel, squares, \$4.65 basis.

**Molasses.**—The market for grocery grades is quiet and values are almost nominal. Holders claim that stocks are in good condition and that former figures are in force. Boiling grades are quoted nominally unchanged. There is nothing important in the syrup market, and valuations are as before. We quote: Cuba, boiling, 19½c.; Porto Rico, 27@38c.; Barbadoes, 25@28c.; New Orleans, common to fair, 35@38c.; do., fair to good, 40@42c.; do., prime to choice, 43@47c.; do., fancy, 50@52c.

**Naval Stores.**—The spirits turpentine market is quiet, and closing sales were at 33½@34c. The rosin market is quiet and prices are nominal. We quote: Common, \$1.10@1.15; good strained, \$1.12@1.17½; E, \$1.25; F, \$1.35; G, \$1.45; H, \$1.60; I, \$1.65@1.67½; K, \$1.80; M, \$1.90; N, \$2.15; window glass, \$2.55@2.60. Tar is quiet and quoted steady at \$2. Pitch is quiet at \$1.35 f. o. b.

**Paper.**—Mills are busy and the call on first hands for all grades is good. The wall-paper combination has passed out of existence by limitation, and prices have declined in consequence. Manillas are strong, and the tendency is to higher values, owing to increased cost of raw materials, while already some few mills have made an advance. Strawboards are moving at combination prices, while in straw wrappings there is a large volume of business, but prices are unsatisfactory. We quote: Fine flat caps, 13@15c.; superfine, 16@17c.; record and ledger, 18@22c.; superized and calendar book, 7@8½c.; do. do., extra machine finish, 7@7½c.; do. do., low grade, 6½@7½c.; news, No. 1, 5c.; do., rag and wood, 4½@5c.; do., straw, 5½@5½c.; manillas, No. 1, light weight, 7½@8c.; do., heavy weight, 6½@7c.; No. 2 manillas, 5@6c.; bogus do., 2½@3c.; straw wrapping, heavy weight, 1½@2c.; do., light weight, 2@2½c.

**Petroleum.**—"Certificates" have been somewhat better and figures closed ¾c. higher. Speculation, however, is quiet. Barreled oil is very quiet, but refiners hold prices firm at 6½c. for 70° Abel test. Case oil was in moderate demand and steady at 8½c. for plain brands. Crude in barrels is quoted at 5½c. for Bradford and 6½c. for Parker. Naphtha quoted at 7½c. for prime city. Home trade lots barreled oil quoted at 7c. for 110° test standard white; 7½@8c. for 120° test do.; 7½c. for 130° test do.; 8½c. for State test do., and 8½@8½c. for 150° test water white.

#### EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO JUNE 30.

	1887.	1886.
From Boston.....gals.	2,396,080	2,868,733
Philadelphia.....	76,910,402	71,227,188
Baltimore.....	3,917,389	6,913,321
Perth Amboy.....	8,272,163	1,593,770
Totals.....gals.	91,496,934	82,603,012
From New York.....	185,490,689	195,236,122

Total exports from United States.....gals. 276,986,723 277,839,134

**Provisions.**—Lard options have been rather more active and prices have favored the seller. Closing prices were July, 6.98c.; August, 7.03c.; September, 7.02; October, 7.17c.; November, 7.08c.; December, 7.07c. "Cash" lard has been slow, but prices have advanced in sympathy with options. We quote: Prime Western steam, \$6.90@6.95; city, \$6.40; continental, \$6.90@7.20; South American, \$7.40@7.60. Cash pork remains dull, but prices are unchanged. Sales, in lots, 990 bbls. We quote: Mess, \$14.50@14.75; prime mess, \$15; new mess, \$15.50, extra prime, \$14.25; clear back, \$15.50@16.75; family, \$15@15.50. Bacon remains dull and nominal. We quote 8c. for long clear, 8.15c. for short do., 8.07½c. for half each, 8c. for short rib, 7.65c. for long clear West, 7.80c. for short clear and 7.65c. for short rib. Cut meats are dull and prices are no better. We note sales of pickled hams, shoulders and bellies at the annexed prices: We quote: Pickled shoulders, 6½c.; do. hams, 11@11½c.; do. bellies, 7½@7¾c.; fresh shoulder, 6½c.; fresh hams, 10½@11c.; smoked shoulders, 7½c.; do. fresh bellies, 7½c.; do. hams, 12½c.; bacon, 10c. Beef is quiet and nominal. We quote mess beef, \$7@9 per bbl.; plate, \$10@10.50; packet, \$9@9.50; extra India mess, \$11.50@12 per bbl., \$16@18 per tce. Beef hams are quiet and nominal. Quoted, \$21.50.

**Starch.**—There is a fair demand and Western corn is firm at 2½c. for bbls. and 2½c. for bxs. Potato is firmer at 3½@3¾c.

**Stearine.**—The market is quiet and easier. We note sales of Western at 7½c. We quote Western and city stearine, 7½@8½c.; oleomargarine, 6½c.

**Sugar.**—Raw—The market has not shown any features of special interest. Holders, while not anxious to sell, have accepted current figures and late sales have been: Cuba Muscovado, 98 test, 4 7-16c.; do. basis, 88 test, 4 ¾c.; English islands, 88 test, 4 ¾c.; do., various, 3½@4½c.; St. Croix, 88@89 test, 4 ¾@4 7-16c.; Cuba molasses, basis 89 test, 4 5-16c.; English islands, various, 4 ¾c.; Bahia, ex-ship, 83 test, 3 15-16c. The market for refined is a shade easier for all grades. The demand has been fairly active and the market closed steady. We quote for export, less drawbacks: Cut loaf, \$3.92; cubes, \$3.55; crushed, \$3.92; powdered, \$3.55@3.67; granulated, \$3.18.

**Tea.**—The market has ruled dull and weak for all descriptions, but particularly for Amoy and Foochow Oolong, which are only salable at a decline of 10@1½c., or at the equivalent of auction values, the closing sale showing 14c. for fully good cargo and 12c. for fair cargo. New Japans are not readily salable, owners being unwilling to accept the basis of the last auction sale, while buyers find no inducement to purchase in advance of their wants on account of the large arrivals via the



Pacific Coast. At the closing auction new good medium touched 17@18c., against a landed cost of 21c. Choice and choicest, although in more moderate supply, sympathize to a certain extent with the low grades, but later more favorable results are looked for. Samples of new Formosas have been received, but, as is usually the case, the first of the new crop is not as satisfactory as anticipated, but later shipments may show better quality. Greens and Pingsueys without important change, but the latter have shown a hardening tendency.

**Tobacco.**—Kentucky has continued fairly active at hardening prices. The crop this season is regarded as only one-half average. The sales known during the past month aggregate 3,600 hhds., of which 1,400 were taken for export, 1,000 by manufacturers, 200 by jobbers, and 1,000 by speculators. We quote: Common lugs, 4@5½c.; good, 4½@6½c.; low leaf, 6@8c.; good, 9@11½c., and fine, 10½@15c. Virginia has continued in good request, with sales of bright cutter, smokers and dark leaf for export. Previous prices well sustained. We quote: 4½@6½c. for common to good lugs, 7@9c. for common to medium leaf, 10@12½c. for medium to good dark do. and 13½@12½c. for good to fine dark do.; common to medium bright wrappers, 18@22c.; fair to good, 23@30c.; hne do., 30@40c.; common smokers, 6@10c.; good do., 12@15c.; fine cutters, 22½@27½c. Seed has ruled quiet but firm.

Sales: 1886, New England, on p. t.; 1885, Ohio, at 7@9c.; 1881-83, Pennsylvania, at 12@15c.; and sundries, 7@28c. Foreign meets with fair attention at steady prices. Sales: Havana at 60c.@\$1.05 and Sumatra at \$1.30@1.50.

## STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuegos.	Yara.
Stock June 1, 1887.....bales.	45,143	.....	.....	80	953
Received since.....	8,921	.....	.....	217	493
Totals.....bales.	54,064	.....	.....	297	1,356
Delivered since.....	8,114	.....	.....	207	250
Stock July 1, 1887.....bales.	45,950	.....	.....	47	110

**Wool.**—The market is without important change. The demand continues light, but holders relax none of their firmness, Texas and California being particularly firm. The sales comprise spring Western Texas at 16@19c.; scoured California, 47½; California, 13½@22; spring Texas, 25; scoured super, 54; extra scoured pulled, 57; do., 52; XXX Ohio, 37; X do., 32@33; spring Texas, 24; Territory, 20@26; unwashed fleece, fine A super pulled, extra do., lambs' do., super do., A super do., No. 1 do., medium unwashed, spring Texas, low unwashed Kentucky combing, black Texas, black Georgia, scoured Texas, Texas (in grease), domestic noils, camel's hair noils and East India, on private terms.

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of San Francisco, Cal., for the two Months Ended June 30, 1887.

Acids, cs.....	27	Bread, lbs.....	188,138	Flour, bbls.....	75,585	Laths.....	63,000	Personal Effects,		Ship Chandlery,	
Acids, pkgs.....	68	Brass, pkgs.....	44	Fish, pkgs.....	351	Lead, White, kegs..	220	pkgs.....	67	pkgs.....	171
Agricultural Imple-		Brandy, gals.....	6,658	Fish, bbls.....	344	Lead, kegs.....	654	Petroleum, gals....	220	Shooks, bbls.....	2,947
ments, pkgs.....	233	Building Material,		Fruit, pkgs.....	460	Lead, lbs.....	1,013,263	Pearl Barley, cs....	1,600	Shrimps, pkgs.....	645
Arms and Ammuni-		pkgs.....	706	Fruit, cs.....	862	Leather, lbs.....	20,030	Piles, ft.....	20,000	Shrimps, pkgs.....	382
tion, cs.....	236	Canned Goods, cs..	10,646	Furniture, pkgs....	522	Leather, rolls.....	810	Plaster, bbls.....	305	Shrimp Shells, cs..	568
Rags, bs.....	201	Casings, bbls.....	2	Gasoline, gals.....	2,067	Leather Scraps, bbls.	280	Posts.....	23,152	Shrimp Shells, bbls.	2,317
Barley, cts.....	30,956	Casings, cs.....	271	Germea, cs.....	50	Liquors, cs.....	820	Potatoes, bbls.....	3,315	Shovels, bbls.....	134
Bark, pkgs.....	1,010	Candles, cs.....	2,184	Ginseng, lbs.....	43,928	Live Stock.....	487	Potash, bbls.....	400	Skins, bbls.....	33
Bark, lbs.....	53,000	Cement, bbls.....	295	Glue, lbs.....	50	Lime, bbls.....	3,215	Pork, bbls.....	100	Skins, Alligator,	
Beans, lbs.....	141,251	Chinese Mdse, pkgs.	1,310	Glue, lbs.....	20,597	Locomotive.....	1	Powder, cs.....	50	bbls.....	48
Beans, sks.....	193,543	Champagne, cs.....	253	Glassware, pkgs....	763	Lumber, feet.....	2,314,739	Powder, kegs.....	331	Soda, lbs.....	25,332
Beeswax, lbs.....	119	Cigars, cs.....	92	Groceries, pkgs....	5,118	Lumber, pcs.....	1,730	Porter, bbls.....	35	Solder, lbs.....	2,000
Beer, cs.....	3,829	Chandlery, pkgs....	92	Grease, Axle, bbls.	50	Lumber, Redwood,		Provisions, pkgs....	5,424	Soap, bxs.....	2,166
Blasting Materials,		Cigarettes.....	1,797,000	Grease, bbls.....	140	feet.....	24,754	Quick silver,		Soap, cs.....	2,194
pkgs.....	50	Cigars.....	1,283,000	Grenades, cs.....	210	Matches, cs.....	664	flasks.....	1,345	Sugar, lbs.....	4,390,676
Bluestone, lbs.....	20,143	Clothing, cs.....	2	Gravel, tons.....	45	Matting, rolls.....	960	R.R. Ties.....	5,000	Sugar, tons.....	2,503
Blacking, pkgs.....	60	Coal, tons.....	105	Hay, bs.....	9,651	Machinery, pkgs....	3,297	Rags, bs.....	1,111	Syrup, bbls.....	150
Blacking, cs.....	100	Coal, lbs.....	580,980	Hair, Goat, lbs....	1,700	Malt, lbs.....	321,013	Raisins, bxs.....	307	Tallow, lbs.....	50,387
Boiler Composition,		Copper Cement, lbs.	159,886	Hardware, pkgs....	4,047	Merchandise, pkgs.	5,659	Raisins, lbs.....	398	Tea, lbs.....	31,236
gals.....	7,440	Coffee, lbs.....	205,803	Hides, bs.....	135,576	Mineral Water, cs..		Rice, lbs.....	1,414,157	Tea, pkgs.....	2,516
Borax, lbs.....	1,300,173	Cordage, coils.....	247	Hides, bs.....	84	Mill Stuffs, sks....	3,774	Sand, tons.....	1,414,157	Ties.....	2,516
Boots and Shoes, cs.	459	Corn, cts.....	6,815	Hogs.....	510	Molding, ft.....	3,000	Salmon, cs.....	4,984	Tin, lbs.....	3,000
Boats.....	6,000	Cottish, lbs.....	62,500	Honey, cs.....	60	Mustard Seed, lbs.	126,040	Salmon, bbls.....	181	Tin Plate, lbs....	328,984
Bone Ash, lbs.....	6,000	Cotton, lbs.....	96,866	Honey, lbs.....	131,195	Nails, kegs.....	1,000	Salmon, half-bbls..	181	Tobacco, lbs.....	303,436
Bone Black, tons.....	471	Cotton, cs.....	1	Horns, sks.....	35,691	Oats, cts.....	3,098	Salmon, kits.....	79	Tools, cs.....	120
Bone Dust, lbs.....	568,176	Coal, sks.....	43	Horns, sks.....	524	Oil-Cake, lbs.....	4,185	Salmon, kegs.....	40	Vermouth, cs.....	400
Bone Meal, lbs.....	482,720	Cows.....	10	Hoofs, pkgs.....	150	Oil-Cake, Meal, lbs.	4,185	Sardines, cs.....	173	Vinegar, gals.....	51
Books, cs.....	2	Disinfectants, pkgs.	19	Household Goods,		Oil, cs.....	14,049	Salt, tons.....	275	Wagon Matl., pkgs.	376
Boiler Composition,		Doors.....	6,673	pkgs.....	213	Onions, cs.....	1,216	Salt, lbs.....	23,096	Wheat, cts.....	1,254,927
cs.....	442	Door Stock, pcs....	18,198	Iron, pkgs.....	47	Opium, cs.....	56	Scrap Tin, lbs.....	131,926	Whale Oil, gals....	13,139
Boiler Composition,		Drugs, cs.....	772	Iron, bbls.....	119	Ore, lbs.....	614,855	Seeds, cs.....	261	Wine, gals.....	513,944
bbls.....	135	Dry Goods, cs.....	1,121	Iron Bars, pkgs....	405	Ore Chrome, lbs....	2,444,245	Seaweed, bbls.....	8	Wine, cs.....	1,359
Bran, sks.....	12,482	Dried Fruit, lbs....	28,893	Iron Pipe, pcs.....	797	Paint, cs.....	900	Shingles, bbls....	1,743,355	Wire Reels.....	280
Bricks.....	174,581	Effects, cs.....	21	Kerosene, cs.....	5,615	Peas, bbls.....	80	Shells, bbls.....	254	Wood, cords.....	23
Broom Corn, bs.....	24	Fertilizer, lbs.....	646,230	Lard, lbs.....	1,427	Pearl Ash, cs.....	400	Sheeting, yds.....	2,400	Wool, lbs.....	2,878,704
Broom Corn, lbs.....	37,611							Sheeting, bs.....	4	Yellow Metal, pkgs.	7,559

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of Baltimore, for the Month Ended June 30, 1887.

Animal Oil, gals....	310	Chinese Vases, bx..	1	Glassware, cs.....	8	Nails, kegs.....	17	Rosin, bbls.....	6,617	Tobacco, Manufac-	
Ash, ft.....	8,000	Chrome, lbs.....	2,200	Grass-Cutter.....	1	Oats, bush.....	100	Salmon, cs.....	20	tured, lbs.....	29,733
Bark, bags.....	838	Cheese, lbs.....	1,805	Grain Mills.....	6	Oatmeal, bags.....	300	Salt, bags.....	50	Tobacco, Manufac-	
Bark, Extract, bbls.	80	Coal, tons.....	2,120	Grape Sugar, lbs..	134,288	Oak, logs.....	39	Shingles.....	111,000	tured, hhds.....	4,110
Bark, Extract, bxs.	260	Corn, bush.....	263,280	Grits, bbls.....	57	Oak Plank, pcs.....	312	Shooks and Heads.	4,700	Tobacco, tcs.....	180
Bark, Liquor, bbls.	12	Cotton, bs.....	635	Hams, lbs.....	20,225	Oak, feet.....	131,667	S. I. Cotton, bags..	94	Tobacco, hhds....	2,337
Bark, Liquor bxs..	150	Coal-Oil, gals.....	10	Hair, bs.....	442	Oars, crates.....	800	Soap, bbls.....	168	Tongues, lbs.....	26,160
Bark, bxs.....	400	Cotton-Seed Oil,		Headings.....	9,000	Oil-Cake, sacks....	13,278	Specie, dolls.....	1,000	Walnut, ft.....	24,000
Bacon, lbs.....	21,903	gals.....	46,000	Hickory, logs.....	136	Oil, bbls.....	300	Spirits of Turpen-		Walnut, logs.....	1,852
Beef, bbls.....	161	Copper Cement,		Hominy, bbls.....	180	Oil, gals.....	52	tine, gals.....	2,000	Walnut, pcs.....	2,038
Beef, lbs.....	50,000	bbls.....	200	Kerosene, gals....	3,132	Oilmeal, punch'ns.	50	Staves.....	248,558	Walnut, squares..	2,956
Books, cs.....	29	Essential Oil, gals.	450	Lard Oil, gals.....	5,846	Organs.....	283	Starch, bxs.....	6,399	Walnut, Sawed, pcs.	1,537
Brooms, doz.....	50	Feed, bbls.....	40	Lard, lbs.....	1,810,210	Petroleum, gals....	899,283	Sugar, bbls.....	27	Walnut Plank, pcs.	3,796
Bread, bbls.....	600	Fish, pkgs.....	43	Lumber, cub. ft....	18	Pitch, bbls.....	20	Sundries, pkgs....	432	Wheat, bush.....	1,344,978
Bran, bush.....	140	Fish, bxs.....	5	Lubricat'g Oil, gals.	13,758	Poplar, logs.....	570	Tallow, lbs.....	2,901,021	Whitewood, ft....	18,000
Butter, lbs.....	477	Fish, bbls.....	62	Lumber, ft.....	225,000	Pork, bbls.....	48	Tar, bbls.....	20	White Oak, ft....	1,130
Car-Wheels.....	60	Flavine, bxs.....	25	Merchandise, bx..	1	Pork, lbs.....	29,500	Tobacco, pkgs.....	156	White Oak, cub. ft.	392
Canned Meats, bxs.	50	Flour, bbls.....	42,018	Medicine, cs.....	300	Quills, bs.....	28	Tobacco Stems,		White Oak Lumber,	
Candy, cs.....	2	Flour, lbs. (in		Meat, bbls.....	5	Refined Oil, gals..	14,400	hhds.....	316	pcs.....	7,016
Canned Goods, cs..	1,299	sacks).....	38,548,498	Meal, bbls.....	175	Rice, bays.....	34	Tobacco Leaf, tcs..	25	Woodenware, doz.	2
Cattle, head.....	2,577	Gas Coal, tons....	4,570	Med. Root, bags..	150	Rope, coils.....	6	Tobacco Leaf, hhds.	580	Woodenware, pkgs.	12

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of Philadelphia, for the Month Ended June 30, 1887.

Bacon, bxs.....	1,000	Coal, tons.....	6,343	Grease, bbls.....	10	Naphtha, Deodor-		Preserves, cs.....	80	Tallow, tcs.....	149
Bacon, pkgs.....	1,300	Corn, bush.....	130,000	Hangris, pcs.....	94	ized, gals.....	18,079	Provisions, pkgs....	1,200	Tallow, hhds.....	428
Bark, Extract, bbls.	25	Cotton, bs.....	181	Hams, bxs.....	25	Naphtha, gals.....	193,406	Provisions, bxs....	1,600	Tar, bbls.....	30
Bark, bags.....	500	Cotton, laces and		Hams, pkgs.....	200	Oak Lumber, pcs....	267	Rat-Traps.....	24	Tar, bbls, empty..	34
Beef, tcs.....	575	silks, bale.....	1	Heads, bbls.....	261	Old Metal, pkgs....	38	Residuum.....	222,578	Tobacco, bbls....	347
Beef, Dressed, qtrs.	4,000	Couters.....	24	Hogsheds.....	4,103	Oil-Cake, bags.....	3,400	Rocking-Chairs, crt.	1	Tobacco, Leaf, hhds.	20
Beef, canned, cs...	200	Crucibles, hhd....	1	Hose Menders.....	6	Oil, Lubricat'g, bbls	100	Rosin, bbls.....	650	Tobacco, Leaf, tcs.	52
Blacking, cs.....	50	Cultivators, iron..	6	Household Goods, cs.	2	Patent Leather, cs.	5	Rope, Manila, coils.	8	Tobacco, tcs.....	83
Blacking, bbls....	4	Dirt and Stones,		Hoops, bbls.....	3,208	Par. Wax, bags.....	400	Scales, cs.....	11	Tobacco, Manufac-	
Buckles, cs.....	4	tons.....	450	Iron Spikes, pegs..	91	Par. Scale, bbls....	600	Shooks.....	2,306	tured, pkgs.....	60
Boards, pcs.....	849	Drugs, bxs.....	31	Lard, pails.....	500	Petroleum, Refined,		Skins, Fur, bs.....	7	Tobacco, Manufac-	
Boilers.....	2	Drills, steel, bbls..	14	Lard, tubs.....	500	gals.....	13,915,492	Soap, bxs.....	400	tured, cs.....	70
Boiler Fixtures, pcs.	403	Drills, steel, bars..	5	Lard, bkts.....	2,000	Petroleum, Crude,		Staves, car.....	59,914	Tongue, Canned, cs.	171
Boxheads and Rub-		Flour, bags.....	6,143	Lard, pkgs.....	300	gals.....	2,135,230	Staves, car.....	1	Wax, bbls.....	58
bers, bxs.....	3	Flour, sacks.....	41,485	Lard, cs.....	70	Pitch, bbls.....	100	Steam-Drum.....	1	Wagon.....	1
Brass Filter.....	1	Flint Paper, pkgs..	76	Lard, tcs.....	7,044	Printing-Presses, cs	9	Syrup, gals.....	278,230	Walnuts, logs.....	99
Cars.....	179	Gum Tragacanth,		Logwood, bbls....	300	Piano.....	1	Syrup, puncheons..	350	Wheat, bush.....	1,318,857
Clothing, bx.....	1	bs.....	39	Manure Forks, cs.	2	Plows.....	2	Tallow, casks.....	393	Weeders.....	6



## General Notes.

THE first vessel to be propelled by electricity ever built in the United States is now in course of construction at a shipyard in Newburg, N. Y. It is a yacht 37 feet long, 7 feet wide and 5 feet deep. It is to be operated by stored electricity. It is building for a Newark (N. J.) electric company, and will be run between that city and New York.

ENGLISH cotton manufacturers in the African trade find themselves subject to severe competition from cotton goods made in Bombay, and fears are expressed that before long China will not only supply her own demands with a home product, but the entire East, the raw cotton coming from fields in Southern China. Remarkable changes seem to be impending in the trade of the Orient.

THE plan of the German Government to provide for workmen in their old age will be applied at first only to industrial workmen, of which it is estimated the number is 7,251,000. The minimum pension to be allowed is 120 marks yearly, the state, employers and workmen each contributing one-third of the pension fund, which will be a tax on each individual of three marks yearly. It is estimated that a state credit of 22,000,000 marks will be required. All workmen over fifty years of age, when the bill is passed, will be excluded from its benefits.

THE report of the Chief of the Bureau of Statistics shows a large increase in immigration. For the five months ending May 31, 1887, the number of immigrants from Ireland was 36,211, against 22,669 for the corresponding period of 1886. England and Wales sent 30,650 this year, against 18,831 last. Germany contributed 49,183, against 33,326, and Italy raised her quota from 12,347 to 24,943. During the month of May 83,664 immigrants arrived in this country, against 55,233 for the same period in 1886—an increase of 28,431. The total arrivals for the five months ending May 31 was 221,070, compared with 145,322 last year—an increase of 76,748.

EARLY in June the work of constructing the canal which is to connect the German Ocean with the Baltic Sea was formally begun by the German Emperor. The ceremony, which took place at Holtenau, on the Bay of Kiel, consisted of the laying of the foundation stone of a lock near the Baltic end of the canal. It is estimated that the total cost of the undertaking will be 156,000,000 marks (about \$39,000,000). This sum has already been voted by the Reichstag and the Prussian Parliament. The canal is being constructed mainly for naval and military purposes, but in times of peace it will be open to the merchant ships of all nations. The German authorities calculate that it will be used annually by about 18,000 vessels, with a collective tonnage of 5,500,000, and yielding a revenue of 4,125,000 marks (about \$1,031,250).

MINISTER ROMEO has informed Mr. Bell, Superintendent of Foreign Mails, that the Mexican Government has accepted the proposition of the Post-Office Department for the inauguration of a through rotary lock pouch registry system between the United States and Mexico, similar to the one now in force between the United States and Canada. At present, however, this exchange will be limited to the city of New York and the City of Mexico, with the understanding that it will be gradually extended to other post-offices in the two countries. By this arrangement registered matter between these two cities will be expedited about four days, as it will not be subject to inspection and handling at El Paso and El Paso del Norte, which heretofore has occupied about two days in each office. The new service will go into operation as soon as the Mexican Government can provide the necessary equipment, probably by August 1.

OF machinery at De Lessep's canal excavation in Panama there is no lack, but it is not highly prized. Arthur W. Rondier, formerly Venezuelan Consul at Boston, who passed several months in the service of the canal company, says: "A vast amount of useless material is sent to Panama, by what influences I do not think I had better attempt to guess. All this material can be seen for itself. It tells its tale of uselessness far better than I could do. It is entirely lost. There are too many locomotives, too much iron, too many furnaces and too much stuff of a similar description. These goods are simply abandoned and left on the ground. An immense amount of money could be economized by more intelligently superintending the goods sent out. There is a fortune there in the way of machines, which would be bet-

ter out of the way. Not the least notice is taken of them as they come. People do not even take the trouble to examine them. Whatever they are they are not wanted, and that is the end of it."

A RETURN has been issued giving the amount of shipping and tonnage which passed through the Suez Canal in the years 1884, 1885 and 1886. There is a considerable falling off in tonnage for last year as compared with 1885, and consequently in the transit receipts. The number of vessels was less by 524, the net tonnage showed a decrease of 568,097 tons, and the transit receipts a decrease of 5,680,049 frs., the same rate of dues being levied for both years. The transit receipts for 1884 amounted to 62,378,115 frs., for 1885 to 62,207,439 frs., and for 1886 to 56,527,390 frs. Great Britain still maintains its position, being for 1886 within a fraction of 77 per cent. of the whole tonnage. France has  $8\frac{1}{4}$  per cent., Holland 4 per cent. and Germany 3.69 per cent.

SENATOR STANFORD's vineyard in California is said to be the largest in the world. It extends for several miles up and down on each side of the road as you approach Vina, and back from the road as far as the eye can reach. In some places the vines are large, in others they have just been set out, and in the latter case they are supported by an army of stakes. The winery already in use on the ranch is a large building, but now Senator Stanford is having a brick structure erected which covers two acres. The walls are already up, and 140 pillars are being erected to support the roof. The building is to hold the wine vats and casks, and is a sort of a wine cellar above ground. It is of mammoth proportions, but so is the vineyard and so will the crop of grapes be.

A RECENT issue of the *Engineer* describes and illustrates a modification of an open-hearth steel plant, designed by Thwaite & Stewart, of Bradford. The leading idea is to tap the metal into a cylindrical converter or decarbonizer, forming a connecting channel between the cupola and open-hearth furnace. During the progress or passage of the metal through the inclined cylindrical converter, the foreign impurities are oxidized, as well as part of the carbon, by means of air injected through the metal at three or more points at graduated distances in the length of the cylinder. When three-quarters of the charge has passed through the converter the air blast is shut off, so that the remaining and unoxidized metal may wash the slag into the open-hearth furnace. The metal is now tested, and the decarbonizing process may either be completed by giving an oxidizing character to the combustion by the addition of oxygen in the form of ore, or by the dilution of the charge by the addition of scrap.

A FOREIGN consul has issued a report in which he says that the principal copper ores in Norway are copper pyrites. The pyrites, which contain too little copper to be used as copper ores, were formerly valueless and were not mined. But from about 1860, when a great demand for them arose as a material in the factories of sulphuric acid, they have been worked on a large scale in Norway. The pyrites are exported in a raw condition. The largest quantities of pyrites are to be found near Trondhjem and Bergen. The Roros Works, which are Norwegian property, have been worked since 1644. With an annual production of nearly 300 tons of pure copper, they were for a number of years the most important copper works in the country, and are at present the largest mining establishment in the country but two. Two hundred and twenty-seven men are employed there, and during the last year considerable mining of pyrites has been carried on, also for exportation. The Miraker Works, in the province of North Trondhjem, produced for a number of years about 70 tons of pure copper annually. The Ytterolto Mines, also situated in the Trondhjem province, were originally worked for copper, but have later been worked on a large scale for English account for gaining pyrites for sulphur. Several mines were worked in the neighborhood of Trondhjem, especially in the Meldal, and near Bergen the Valaheim Mines, besides others, were operated on a large scale for gaining copper and sulphur. The works of the Karmo Island, in the province of Stravanger, owned by Belgians and Frenchmen, were first operated in 1865, and are now the largest mining establishment in the country, employing about 600 workmen. The shafts have been sunk nearly 500 metres. The pyrites richest in copper are smelted on the spot into a matte containing 25 per cent. of copper. More copper was, during the last few years, contained in this matte than in the



aggregate production of copper from the other mines in the country (in 1882 over 400 tons of copper), but the bulk of the pyrites is exported.

THE Bucyrus Foundry Company, Bucyrus, Ohio, has recently closed an important dredging contract with the city of Mexico. The bonds for the enterprise which this company is to undertake will be guaranteed by the Mexican Government, and all machinery necessary for conducting the work will be admitted to Mexico free of duty. The contract, so far, amounts to about \$300,000, but it is understood to be only the beginning of more extensive operations for the Mexican Government.

WHILE the United States has been credited with the possession of most of the known mineral products of the world, sulphur is one which has not found a place in that list. Yet it is now known that in Utah there is a vast deposit which from its extent and purity must have been poured out in a molten lake like lava. This deposit is about two hundred miles south of Salt Lake City on Cove Creek. It is about two hundred feet square and shafts have been sunk from thirty to sixty without reaching the bottom. Rich deposits are also known in New Mexico, California and Colorado.

A CONSTANTINOPLE correspondent of one of the English journals telegraphs that negotiations have been going on for some time between the Porte and a French group of financiers for an extension of the railway from the Bosphorus to Ismidt as far as Angora. Another group of English, German and French capitalists had tendered for the same extension. The former proposals have now been definitely rejected, and as the Sultan is convinced of the urgent need of the railway in order to prevent famine and to "give work to the unemployed," it is believed that the project of the latter group will be immediately accepted and the work proceeded with.

A NEW YORK company which has for some years past been negotiating with the government of San Domingo for the privilege of building a railroad across that island, southward from the port of Manzanilla, claims to have obtained all needed concessions, so that work will begin immediately. The company receives as a gift alternate sections of land on the route, about 500,000 acres and freedom from all taxation. The parts of the island through which the road will run abound, it is said, in forests of mahogany, satinwood and rosewood, and there are clearings where tobacco, sugar-cane, coffee, bananas, cocoanuts and other tropical fruits grow in abundance.

M. G. COLTART, St. Rollox, and J. Menzils prepare a wool oil by mixing an animal oil, such as fish oil, with sulphuric acid, adding water and stirring again, and after drawing off the acid water separating out, stirring into the mass a solution of caustic soda. Then refined mineral oil, magnesium chloride, barium chloride and pure seal or whale oil are successively added. The first part of this patented mixture is a long-known composition in which the animal oils are saponified and partly oxidized by the sulphuric acid and water, and the fatty acids which separate out, by the solution of caustic soda. The addition of the magnesium and barium chlorides, however, must necessarily give rise to the formation of insoluble soaps which cannot be prevented by the mineral oil nor the whale oil, and will rather act injuriously than advantageously in the subsequent manufacturing operations.

THE diamond found some time ago in North Carolina has been sent to Tiffany & Co., of New York, who pronounce it to be of considerable value. It was discovered in the following manner: A little boy was playing at a spring on the property of Captain Bright, about half a mile northeast of Dysortville. Noticing a sparkling object at the side of the spring, he picked it up, thinking it was a piece of crystal. Being rather pretty, he concluded to keep it. It so happened that his father saw it, and he thought it was more than an ordinary stone; whereupon it was shown to several parties in the neighborhood, and finally shown to T. K. Bruner, of Raleigh, who pronounced it a diamond. After having taken steps to secure the property around the locality where the diamond had been found, Mr. Bruner gave the father \$75 to be handed to the lad who picked it up. The stone is a dodecahedron, slightly lengthened vertically, and has a pale tint of yellow, approaching citrine, but not so deep. It weighs 4.392 carats, and its specific gravity is, approximately, 3.627; both weights were taken in the laboratory of the Department of Agriculture.

A. HOLLENBERG contributes to the *Zeitschrift* of the German Society of Engineers an article upon the prevention or diminution of oscillation in chimney-stacks and high walls, by loading with an excess of deadweight. He cites an instance of a chimney only fifty-six feet high, built in common lime mortar, which, when completed, was observed to oscillate to an alarming degree. Consequently the chimney was loaded by putting on the top an iron plate weighing upward of  $2\frac{1}{2}$  cwt. The cure was perfect. Although the stack is built in an exposed situation it has stood for sixteen years, during which many severe storms have tried its strength, yet it does not show any horizontal or vertical cracks. Similar results are recorded in connection with the construction of a mill at Mullfort, near Rheydt. Here a mill-owner found it necessary to heighten a building by two stories without interrupting work in the factory below. The constant vibration caused by the machinery, however, destroyed the walls as soon as the bricks were laid. To check this effect the walls were heavily loaded with iron rails as fast as the cement would bear them; and by this means the additional height was safely reached, the vibration of the walls being completely stopped.

A PROCESS for effecting the complete "bucking" or boiling off of vegetable fibres at a single operation, "and consequently to obtain superior white products," has been patented by Firmin Mallet Fontaine, of France. The vegetable fibre appears to be flax, the apparatus employed is the novelty, and consists of a series of four vessels, in which the fibre to be treated is packed. The upper part of each vessel is connected by a pipe with the lower part of the one next to it, and the last one with a boiler or heater, from which a pipe proceeds which may be connected with any one of the series of vessels. It is therefore an arrangement by which the fibre can be treated in a continuous manner by any suitable liquid chemical. Flax can be retted on this apparatus by simply boiling with water; high pressure is desirable for some kind of flax, but for very fine flax it is preferable to employ steam expanded by means of a vacuum, and wash with water of a temperature a little below 100° C. There is nothing new in the chemicals employed.

THE first year in which attention was seriously paid to petroleum in California was 1879, and in 1885 California ranked third among the petroleum producing States, and at the present rate of increase she will soon be second only to Pennsylvania. In the oil-fields of Southern California much activity prevails. A pipe line from the Sespe wells to the Santa Paula Station has just been completed, and another pipe line from the Puente district to Los Angeles is being located by surveyors. A San Francisco firm is having a steamer built, with a carrying capacity of 3,500 barrels, to ply between Ventura and San Francisco, and a San Diego company is also building a vessel for the same purpose to use between Ventura and San Diego. The Sespe wells, referred to above, appear to be of actual and permanent value. Well No. 1 is good for 600 barrels, or more, a day, and Well No. 2 is flowing 125 barrels a day at a depth of only 200'.

IN a machine shop at Auburn, Me., can be seen a novelty in the shape of a steam-wagon, now in process of construction. The machine will have all the appearance of a common Concord wagon, with the exception that a part of the boiler and its covering will show above the body of the wagon. All the motive-power will be concealed under the flooring. The power will be furnished by two small engines of about three horse-power; the boiler is made from iron pipe in spiral form; the wagon body contains two seats, easily holding three each. A small tank for holding water is to be placed in the forward end of the body in a place especially adapted for it, and a small bunker of coal on the side and end.

According to the Berlin *Centralblatt der Bauverwaltung* it is very possible to give plants too much light, and unexpected results have followed the lighting up of the Winter Palace at St. Petersburg with electricity, the intense brilliancy of the light having been found to cause dire destruction among the ornamental plants used for the decoration of the banqueting halls. It appears that the complete illumination of the rooms for a single night is enough to cause the leaves to turn yellow and dry up and ultimately to fall off. The damage to the celebrated collection of palms at the palace is especially serious. It is supposed that the injury is principally due to the sudden change from the sunless days of the Northern winter, and from the subdued light of the plant houses to the blinding light of the ban-



queting halls. It has been shown beyond a doubt that the rapidity of the injurious action and its amount are directly proportional to the intensity of the illumination, and plants standing in niches or other places partially shielded from the light are found to have sustained no perceptible harm.

THE Isthmus of Corinth Canal Company has been obliged to obtain an extension of three years from the Greek Government in which to complete its works. The canal, which was commenced in 1882, was to have been opened in 1888. Great mistakes appear to have been made in regard to geological strata, which have to be dealt with. Rock instead of sand or gravel has been encountered in certain places.

FOREIGN competition in China is dealt with in a very able article by the *Chinese Times*. It alludes to the dishonest means adopted with a view to destroy and decry competing influences and competition, and says that even the best informed and most reliable foreign journals are extremely misleading and entirely unreliable on Chinese matters, for there seems to underlie all their statements, and, consequently, all the actions of strangers who go to China for business purposes, the idea that the Chinese and their officials are children. Perhaps in many ways this assumption may be true, but it is not so in judging of characters which are at so much pains to resemble their own. The general result of the unvarying detraction by foreigners of each other can only be to place them all, without distinction, under the ban of Chinese contempt, and to retard the progress which the country might otherwise make, by a reasonable and discriminating adoption of foreign ideas.

It is stated that a powerful syndicate, including several Northern millionaires, has been organized, in which all the phosphate miners and mining companies have joined, for the purpose of controlling and keeping up the price of crude rock. Such a syndicate was in existence a year or two ago, but it only embraced the miners of land rock, the river companies failing to come into it, although they kept the price up to its figures. About a year ago, however, there was a depression in the market, and the river companies made a break, which was followed by the dissolution of the land syndicate. David Roberts, a well-known phosphate miner, of Charleston, S. C., is to be the manager, and is to be given absolute control of every ton of crude rock mined in the State, with power to sell at such rates as he may fix. A material advance in price may therefore be looked for at an early date. This is one of South Carolina's greatest industries. Last year, the aggregate production of phosphate rock was 449,603 tons, of which 381,603 tons were exported, and 68,000 tons were consumed by the local fertilizer manufacturing companies. The aggregate value of this production was, in round numbers, \$2,000,000. Large quantities of this rock are shipped to New York and other Northern ports.

ACCORDING to Emile Levasseur, the United Kingdom has the largest number of great cities of any country in the world, excluding China, as to the census of which we have really no trustworthy information. The United Kingdom has no fewer than twenty-seven towns each with a population of more than 100,000 inhabitants. The population of these twenty-seven towns amounts to 9,287,000, being about 26¼ per cent. of the whole population of the kingdom. India has the next largest number, twenty-two; but the population of the twenty-two towns is only 4,506,000, and the proportion to the whole population of the Indian empire is only a little over 1¾ per cent. Next comes the United States of America with twenty towns, having an aggregate population of 4,753,000, being just about 9 per cent. of the total population of the union. The German empire ranks fourth. It has seventeen towns with a population each exceeding 100,000. The aggregate population is 4,302,000, and the proportion to the total population is a little under 9¼ per cent. Italy ranks fifth with eleven towns each having a population of over 100,000, aggregating 1,970,000, and forming a little under 7 per cent. of the total population of the kingdom. France comes only sixth with ten large towns having an aggregate population of 3,904,000, forming a little over 10½ per cent. of the population; and then comes Russia with nine large towns having an aggregate population of 2,966,000, being 3¼ per cent. of the total population. Spain and Austria-Hungary have each five large towns, the aggregate population amounting to 8 per cent. of the entire Spanish population, but to a little under 4 per cent. of the Austro-Hungarian population. Belgium has four towns with over 100,000

people, having an aggregate population of 871,000, and the proportion to the total population is 15¾ per cent.; and the Netherlands and Zealand have each three towns, the aggregate population of the one being 16¾ per cent. of the whole and the other being only 4¾ per cent. of the whole.

HENRY REID, who was the leading British authority on the subject of Portland cement, thought that he had discovered a fortune for himself and others when he found that in Ireland the materials existed for manufacturing the cement. As often happens in cases of the kind, he did not live long enough to realize his anticipations. The work is now being carried on by other hands. At the last meeting of the Irish Institution of Civil Engineers, a paper was read on the cement which is made in the suburbs of Dublin. All the members who used the material were able to testify to its qualities. Mr. Stoney, who makes concrete in vast masses for the improvement of the harbor, said the only objection he had was that it could not be supplied fast enough. At a time when German cement is imported in large quantities, the growth of such an industry has but the one aspect.

## Business Notices.

W. G. HYNDMAN & Co., iron roofing manufacturers, Cincinnati, Ohio, U. S. A., have recently made a large shipment of their roofing to British Honduras. This firm supplies a superior brand of iron and its roofing is highly appreciated by those who have used it.

THE fame of the Hartshorn spring shade-roller is world wide. This roller is sold in almost unlimited quantities and supersedes all of the ill-contrived appliances for raising or lowering window-shades. Particulars, price-lists, &c., can be had by addressing the manufacturer, Stewart Hartshorn, East Newark, N. J., U. S. A.

THE Volker & Felthousen Manufacturing Company, Buffalo, N. Y., U. S. A., has taken the contracts for the water-works pumping machinery for San José, Cal.; Garden City, Great Bend, Oswego and Marion, Kan. This firm has been running night and day for the past six months, and reports its pump business increasing rapidly. The company will soon begin the construction of a new factory upon a tract of land which it has recently purchased in the suburbs of Buffalo. The new factory will give greatly increased facilities, and the company expects to add to its line of manufacture that of high-duty duplex pumping-engines.

THE Penfield Block Company, Lockport, N. Y., U. S. A., is putting in new and improved machinery for the manufacture of a wooden snow-shovel especially adapted for railway use. Purchasing agents and superintendents are awake to the fact that it makes a great difference what kind of a shovel they give "Patrick" to work with. The company also reports an increasing demand for its improved hoisting blocks for wire and manilla rope. Until it put its phosphor bronze self-lubricating bushings in these blocks no bushing could be found to give entire satisfaction. It has just had printed an illustrated sheet showing some of its more important styles.

ONE of the institutions of Jackson, Mich., that has carried the name of the city to every nook and corner of the country, and to nearly all parts of the world where wagons are used, is the Austin, Tomlinson & Webster Manufacturing Company, manufacturer of wagons. In almost every village and town, in almost every farming community, the name "Jackson wagon" is as familiar as the most used of domestic terms. No better evidence of the popularity of the wagons is needed than the fact that the works are pushed to the utmost to supply the demand. Orders are coming in from all directions, even from foreign countries, one being received a few days ago from Buenos Ayres, South America. In that far-away land and among that peculiar people the sight of a "Jackson wagon," when brought into comparison with the primitive appliances used for wagons, must be pleasing. The manufacture of farm wagons and wagons suited for general teaming is an industry that has given many towns their first public notoriety. The Austin, Tomlinson & Webster Company and the "Jackson wagon" have become famous, and thus have given the city of Jackson a world-wide reputation. For particulars as to the Jackson wagons address the Austin, Tomlinson & Webster Company, Jackson, Mich., U. S. A.



# AMERICAN MAIL

DEVOTED TO THE

## Manufacturing and Producing Interests of the United States.

Published the First of Every Month, {  
in one Edition, for all Countries. }

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### India-Rubber in Manufactures.

METHOD OF COLLECTING THE GUM—AFRICAN RUBBER—BEGINNING OF  
MANUFACTURE IN THE UNITED STATES—THE VULCANIZING PROCESS—  
ADVANCE OF INVENTION—THE VARIOUS APPLICATIONS OF RUBBER  
TO DOMESTIC USES.

**C**AOUTCHOUC, or the exudation from certain trees, found chiefly  
in Brazil, Central America, Asia, Africa and more lately col-  
lected from Mozambique, is one of the most useful and wonderful of

tained from the trees called by the natives "rava," and which is found  
along the coast. The juice of this is extremely watery, but the milk  
may be congealed by the application of the juice of the lime, as is  
done in the collection of a somewhat similar species of caoutchouc on  
the island of Madagascar. The market value of these is necessarily  
lower than that which is obtained in a more condensed form, and their  
loss of weight by evaporation is considerable for some months after  
collection.

The history of the manufacture of this article in the United States  
begins with the year 1832, when John Haskins and Edwin M. Chaffee



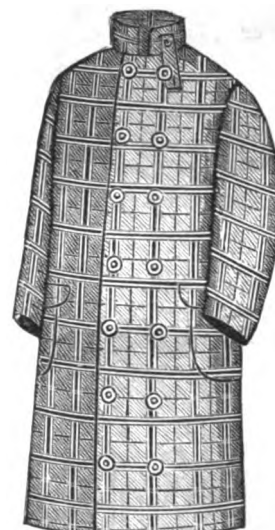
WOMAN'S WATERPROOF CLOAK.



WATERPROOF HAT.



RUBBER TENNIS SHOE.



MAN'S WATERPROOF COAT.

all vegetable substances used in the industrial arts. The perfection of  
skill exhibited in the manufacture of this substance in adapting it to  
the requirements of the various uses to which it has been put has be-  
come proverbial, and the results in the form of the variety of goods  
offered to the world add one more to the list of triumphs to be re-  
corded for the United States.

In order to obtain the caoutchouc, as it is called by the natives of  
South America, a longitudinal gash is made in the bark of the tree  
with a narrow hatchet, whence a white and oily liquid flows. Into this  
gash a wedge of wood is inserted, to keep it open, and beneath it is  
a cup which, in from three to five hours, is found to contain about five  
tablespoonfuls.

The "seringero" or rubber gatherer then empties the contents of  
the cups into an earthen vessel and commences the operation of form-  
ing it into shapes and smoking it.

The collection of this substance in Mozambique is of very recent  
date, but has so rapidly extended that it now forms the most valuable  
export of that country. The rapid extension of the rubber industry  
there is due entirely to the natives, and in working the gum they have  
been left almost entirely to their own devices. As a consequence there  
is much exported of an inferior quality, this last being chiefly obtained  
by crushing and boiling the roots of the trees, in order to extract the  
last vestiges of the gum.

Still another inferior quality, but capable of use in the arts, is ob-

tained, in conjunction with others, the celebrated Roxbury India-Rub-  
ber Company, which was shortly afterward incorporated with a capital of  
\$400,000. For this company Mr. Chaffee invented the mammoth ma-  
chine for spreading rubber without a solvent, which machine, with  
slight modifications, is still in use for that purpose. This company  
made its goods by dissolving the rubber in camphene or other solvents,  
and coloring with lampblack, and, while in the form of paste, spread-  
ing it on cloth, from which coats and other garments were made. These  
were then dried in the sun or in a heated room, until the solvent evap-  
orated. It was found, however, that the goods were still affected by the  
extremes of heat and cold, and the inability to overcome this difficulty  
resulted in the abandonment of the enterprise and a total loss of all  
the capital invested.

In 1834 Charles Goodyear, of New Haven, Conn., had his attention  
drawn to the subject, and, after a number of experiments, lasting  
over a series of years, succeeded in discovering the process known  
as vulcanizing, and to which must be attributed the success and condi-  
tion of the industry at the present day.

It was a well-established fact that rubber melted at 200° Fahr. by  
applied heat, and in the sun at 100°, and from observation he was  
led to infer that if the charring process of the heat was arrested at  
the right point the gum would lose its adhesiveness throughout, and  
in 1843 he had so far perfected his invention as to apply for patents in  
the United States, England and France for vulcanizing rubber. The



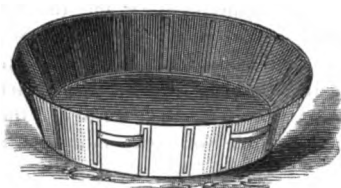
salient points of his invention were the use of sulphur and a high degree of heat.

The importance of this invention cannot be too highly estimated; the change effected by this process in the native gum may be compared to that which is wrought in a perishable skin or hide by the process of tanning, and a substance is produced possessing all the valuable properties of gum-elastic, in the highest degree of perfection necessary for use in the arts, and yet freed from the imperfections which would have forever prevented its application to many purposes of the highest utility. By this invention it is rendered hard, like metal, or soft as the original gum; and it would be no more extraordinary if gold and silver, while retaining their qualities, should be turned into a substance elastic as india-rubber.

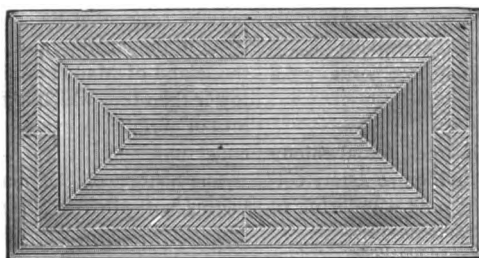
After long efforts the qualities of ivory, buffalo-horn shell and whale-

sandals to the most substantial rubber boot or shoe required in any branch of the trade. The "Zepher" rubbers are made of the lightest materials consistent with serviceability and show in quality and finish the progress that has been made in this extensive branch of the manufacture. Some of the smaller sizes weigh only three ounces per pair, or less than two ounces each, and still they are guaranteed to do the work required of them, viz., protection from dampness combined with ease and comfort to the wearer.

From modifications of vulcanized rubber with tar an innumerable quantity of articles known to the stationery and fancy-goods trades are made—such as pen-holders, bracelets, and other rubber jewelry and ornaments, pencil cases, shawl pins, combs, brushes, corkscrews, buttons, umbrella rings, rulers, inkstands, toilet cases, thimbles; tumblers, poker checks, match-boxes and stationer's rubber. In the drug-



RUBBER DISH.



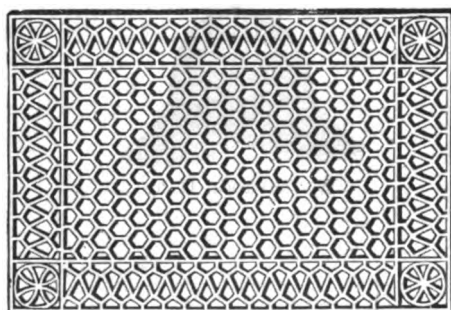
RUBBER MAT.



YACHT BUCKET.



BUCKET—COLLAPSED.



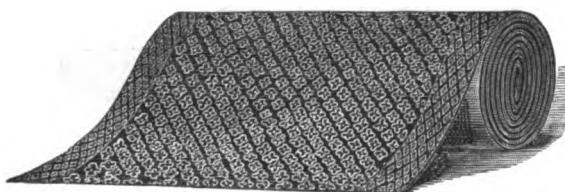
RUBBER MAT.



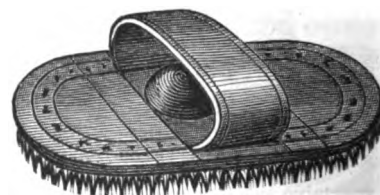
HAVERSACK.



COLLAPSIBLE BUCKET.



RUBBER CARPETING.



CURRY COMB.

bone were secured, and in these caoutchouc is infinitely superior to its half brother, gutta-percha, in its firmness, beauty and durability. It offers to the tool the resistance of the hardest wood, bone or even marble, and while retaining the rigidity of tempered steel it can preserve the pliability of whalebone, or remain flexible as leather, or take on the brittleness of glass. It is susceptible of the most beautiful polish and can be used in either massive pieces or in thin layers of veneering.

The inventions are now so far perfected as to make the rubber trade one of the most important and staple branches of this industry in this country. The raw material is admitted free of duty, but it is not easy to get at a precise statement of the total imports. The accessible figures of the past year give 20,000,000 pounds, but how much of this is referable to crude gutta-percha is not stated. One company, however, estimates that fully five-sixths of the whole is pure rubber.

The articles made from this material to-day are so numerous that it is almost impossible to do more than refer to a few of the more important. They embrace rubber garments of all kinds, rubber cloths, carriage gloves, wagon aprons, tarpaulins, piano covers, wringer rolls, springs and men's and women's rubber boots and shoes; of these last the assortment includes everything, from the lightest women's

gists' department air-pillows, invalid cushions, chair cushions, water bottles, syringes, nipples for children's feeding bottles, gas bags, hospital and nursery sheetings, bed-sheets, hard-rubber syringes, ear trumpets, ice bags, and cerebral coils are a few of the more generally known articles of this manufacture. In fact, it would make too extended a list to recount all the things, once made from bone, ivory, glass, metal or wood, which are now to be found worked up in this useful material.

In the employment of caoutchouc as a branch of manufacture the first operation is the purification of the crude material by washing in water with the aid of powerful machinery, after which it is kneaded or rolled into a solid mass, from which pieces of the required size bands or threads are cut by knives operated under water.

Caoutchoucine is a form of this material obtained by cutting the ordinary material into lumps and then heating it to about 600° Fahr. As this temperature is approached a dark or colored oil or liquid is distilled over and at 680° it becomes colorless and highly volatile. Cordage and similar material when steeped in caoutchoucine become remarkably supple and tenacious. Waterproof cloth can also be prepared by this means, as can also a great variety of varnishes.

Caoutchouc mixed with fine sand is the substance used for the re-



removal of ink-marks from paper and similar articles. After these simple uses came the discovery of certain varnishes which were found to be capable of resisting changes of temperature without cracking and scaling off. Then followed the discovery of the facility with which two recently cut surfaces of caoutchouc weld themselves together, and which resulted in the making of rubber tubing and rubber joints of all kinds. But by far the most important discovery was that of its application to waterproof purposes. For this purpose the caoutchouc is dissolved in oil distilled from gas tar and spread over the surface of a piece of cloth, upon which a similar piece is then extended. Both are then passed between a couple of rollers, when the now waterproof fabric consists of two pieces of cloth united by an interposing layer of caoutchouc.

Very thin sheets are made by soaking a globular or bottle-shaped piece of the gum in water and then distending it by inflation, and when in that condition, if it be dried, it will not again contract. Various fabrics, the warp or longitudinal thread of which is caoutchouc and the weft or cross threads cotton, silk or linen, are made.

Small articles are frequently made by dipping molds or forms into a solution of india-rubber and drying after each immersion, until the required thickness has been given to the article. Mats are formed by

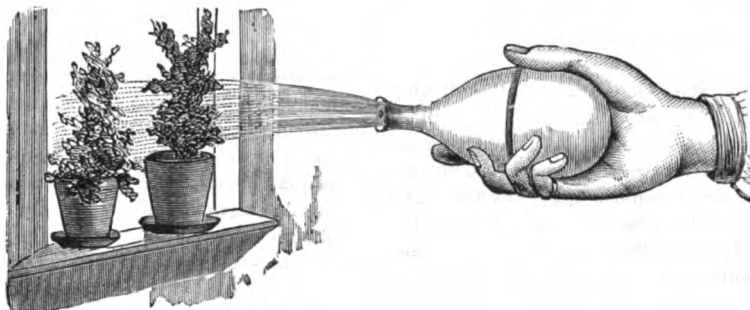
useful applications of rubber, but imagination can well expand itself in trying to conceive of the variety and importance of the manufactures of the American rubber-goods interest.

### Pyro-Magnetic Dynamo.

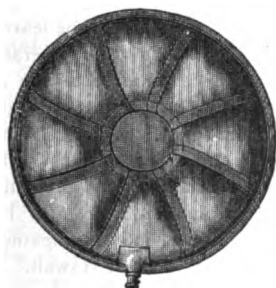
A PAPER by Thomas A. Edison on the pyro-magnetic dynamo, a machine for producing electricity directly from fuel, was read at the recent meeting of the American Association for the Advancement of Science. Following is its description as given by Mr. Edison :

The principle of utilizing the variation of magnetizability by heat as the basis of electric machines, though clearly applicable to generators, was first applied to the construction of a simple form of heat-engine, which I have called a pyro-magnetic motor. A description of this motor will help us to understand the generator subsequently constructed. Suppose a permanent magnet having a bundle of small tubes made

of thin iron placed between its poles and capable of rotation about an axis perpendicular to the plane of the magnet, after the fashion of an armature. Suppose, further, that by suitable means, such as a blast or a draught, hot air can be made to pass through these tubes so as to raise them to redness; suppose that by a flat screen symmetrically placed across the face of this bundle of tubes, and covering one-half of them,



PLANT SYRINGE.



AIR CUSHION.



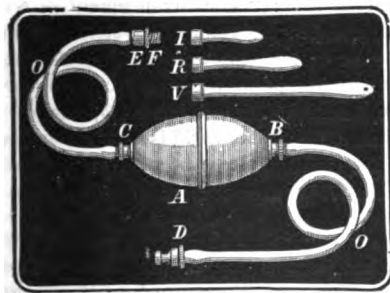
GUN CASE.



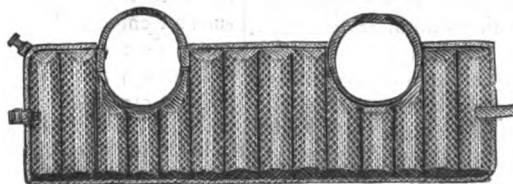
GUN CASE.



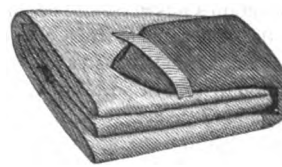
WINDOW CLEANER.



SYRINGE AND ATTACHMENTS.



LIFE PRESERVER.



FOLDED BATH TUB.

perforating the calendered sheets of rubber with punches. Valves, springs and similar articles are made from soft rubber.

For solid goods the rubber is forced into molds under pressure, which is kept up until they are "cured" or hardened to the required density. Toys are made for the most part in molds or segments, which are afterward joined together, and before being closed up a little carbonate of ammonia is introduced, which expands during the process of heating, and thus causes the rubber toy to expand to its full capacity.

Among the toys are balls of every description—footballs, solid balls, colored musical balls, inflated balls and rattles.

In no other country has this material been used to so great an extent or had so diversified applications. It enters into the daily life of the people in their domestic as well as business avocations. It is a considerable item in dental surgery, and no one catalogue issued by manufacturers can include everything of which rubber is more or less a component part. A few illustrations are given to show some of the

access of the heated air to the tubes beneath it is prevented. Then it follows that if this screen be so adjusted that its ends are equidistant from the two legs of the magnet, the bundle of tubes will not rotate about the axis, since the cooler and magnetic portions of the tube-bundle—i. e., those beneath the screen—will be equidistant from the poles, and will be equally attracted on the two sides. But if the screen be turned about the axis of rotation so that one of its ends is nearer one of the poles, and the other nearer the other, then rotation of the bundle will ensue, since the portion under the screen, which is cooler and therefore magnetizable, is continually more strongly attracted than the other and heated portion. This device acts, therefore, as a pyro-magnetic motor, the heat now passing through the tubes in such a way as to produce a dissymmetry in the lines of force of the iron-field, the rotation being due to the effort to make these symmetrical. The guard plate in this case has an action analogous to that of the commutator in an ordinary armature.



## Government Intelligence.

### Foreign Relations and Domestic Statistics.

THE ISSUE WITH CANADA—HAWAII—NICARAGUA—MEXICAN RELATIONS—EMIGRATION—RIGHTS OF ALIENS—LABOR STATISTICS—THE TOBACCO INTERESTS—EXPORTS AND IMPORTS—OUR MINERAL RESOURCES—POSTAL STATISTICS—BELGIAN TARIFF—GERMAN COUNTERFEITS—BRAZIL'S SUGAR INDUSTRY—PUBLIC DEBT—ENVOYS FROM CHINA—DIPLOMATIC APPOINTMENTS—NAVAL NEWS.

NOTHING can be learned at the State Department with reference to the Canadian report that new proposals have been made touching the settlement of the fisheries dispute. It is said that the United States Government offered certain new propositions, but the Assistant-Secretary of State will neither confirm nor deny the statement and refuses to talk on the subject. The Secretary of State has received a dispatch from Consul-General Phelan, at Halifax, stating that he is investigating the recent seizure of American vessels in Canadian waters, and that he has instructed the consul at Charlottetown, P. E. I., to take measurements of the sea at points where the seizures were made, so as to establish the exact distance from the shore. The schooners Argonaut and J. H. French, above referred to, whose boats and seines were seized by the Canadian officials, have arrived at Gloucester, Mass. The captains say that after the boats were seized they started for home, coming through the Gulf of St. Lawrence, keeping thirty miles off shore sailing around Cape Breton. Owing to a dense fog which prevailed all the time the Canadian cruiser could not see them. They also say that when seized they were outside the limit. Neither boat brought any fish. It is said that there are now on the mackerel grounds seven Canadian cruisers looking after American fishermen. The mackerel are plentiful, thus causing much daring on the part of the fishermen and much watchfulness on the part of the cruising Canadians.

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The Secretary of the Navy recently received from Admiral Luce, commanding the North Atlantic squadron, the following, under date Halifax, July 30: "As there appears to be a want of information on the part of our fishermen operating in the waters of the Gulf of St. Lawrence in regard to the restrictions imposed upon foreign fishing vessels by Canadian fishing laws, a series of interrogatories were submitted to Captain Scott, of the Canadian Fishery Service, covering their rights and the statutory restrictions, and I have the honor to enclose herewith his answer. A number of these circulars will be distributed among the fishing fleet for the information of those concerned." The enclosure is a printed sheet, with the admiral's questions and the captain's answers. The circular of the admiral for the guidance of the fishermen recites the terms of the treaty of 1818, and strongly recommends masters to report to custom-house or cruiser officers upon arrival in port, not to permit the crew to trade with people on shore, and if seized to make no statement except to the consular agent, and that at once upon seizure. He also calls attention to a recent decision of the Canadian Chief Justice in the following language: "Canadian courts have already decided that the presence of an American fisherman inside the three-mile limit, and not being on his way to obtain necessary wood, water, repairs or shelter, is prima facie evidence of his intention to violate treaty obligations by fishing." He urges American fishermen to retain the sympathy of the American Government by obeying Canadian laws in every particular.

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The Secretary of the Navy took official notice of the matter by sending the following cablegram to Admiral Luce: "I assume that your application to Captain Scott was not for the purpose of obtaining from him an exposition of the law, but to enable our fishermen to know the extent of the Canadian claim, and thus avoid difficulties if they should so choose. This is not quite clear from your report, and it would be better to issue no more circulars, and withdraw such as are within your reach. Captain Scott is not understood to be the agent of his government for any such purpose as that for which you have employed him, and if he were, the application might more properly be made to

our own government in case a correct statement of the Canadian claim be desired."

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This is about the situation of the fish question at present. The seizure of American fishing vessels seems to be regularly offset by the capture of English vessels for illegal seal fishing in the Alaskan waters. Some weeks ago the United States revenue cutter Rush seized two stealing sealers in the Alaskan waters. The seal fisheries are very valuable, and the wanton and indiscriminate killing of seals should be prevented, even if our English cousins are angered thereby and show a disposition to further entangle the Canadian troubles.

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We are dependent upon the mails for our latest returns from King Kalakaua, as there is no cable to the Hawaiian kingdom. The recent disturbances on that little island have drawn attention to the fact that a cable line from San Francisco to the Sandwich Islands, thence to Australia, is badly needed, and such a line would be of great usefulness. A telegraph line to Australia and the large provinces in that neighborhood would in a few years prove a paying investment. At present messages go nearly around the globe on their way to Australia. Our mail facilities with Australia could be greatly improved by having the colonial mail delivered at some southern port in California and hurried across the continent to the fast-going steamers in the East. It is thought that a saving of thirty-one hours between London and the colonies could be effected by such a scheme. But to return to the Hawaiian Islands. It is reported that nothing very important has occurred since the King signed the new constitution. The new constitution, it is stated, proposes to make a republic of the little kingdom and confer upon the people the exalted privilege of holding ward meetings, running primaries, talking for Congress and abusing the Presidential candidate. At the Department of State nothing can be learned about these important changes in the island, but it is the general opinion that the affair has no political significance relative to the affairs of other nations, but is rather a protest from the people against the corruption and mismanagement of the advisers of the King. The United States steamer Adams is now at Honolulu, and the Vandalia and Juniata will arrive in a short time. Instructions for the guidance of the officers of these vessels have been mailed from San Francisco. At the departments it is stated that all possible arrangements have been made to protect the interests of Americans in Hawaii.

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In his reply to the address of the Minister from Nicaragua recently, the President of the United States said: "The advancement of Nicaragua and her sister states of the Central American system is a subject of great and friendly interest to the people of the United States, and your reference to the construction of an interoceanic canal meets my cordial and sympathetic acknowledgment. The importance of such an enterprise to the commerce of the world is well understood, and the especial interests of the United States and of Nicaragua in its early completion are comprehended by the government and people of both countries."

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Rear-Admiral Ammen, retired, who is one of the most energetic workers for the Nicaraguan canal, recently returned to Washington from New York, where he had attended an important meeting of the canal company. He says that everything is in a very promising condition, and that contracts for dredging will soon be let and work will undoubtedly commence at an early date.

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The Mexican Minister has informed Mr. Bell, the superintendent of foreign mails, that the Mexican Government has accepted the proposition of the United States Government for the inauguration of a through rotary lock pouch registry system between the United States and Mexico, similar to the one now in force between the United States and Canada. For the present, however, this exchange will be limited to the city of New York and the city of Mexico, with the understanding that it is to be gradually extended to other places in the two countries. By this arrangement a saving of about four days will be obtained, as it will not be subject to delay and inspection at El Paso and El Paso del Norte.

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There seems to be a very friendly feeling shown by the Mexican



people for the citizens and the Government of the United States, notwithstanding the oft-repeated stories of outrages on the border. In a recent dispatch to the Department of State, the United States consul at Guaymas, Mexico, speaks of the observance of the Fourth of July there. He says that the Federal, State and municipal buildings, all the shipping and different foreign consulates displayed their national colors in honor of the day. A military band played patriotic airs before the United States consulate, and official visits were made during the day by the commanding general and all of the high civic officers of the city. The friendliest feeling was manifested, he says, by all classes toward the United States on this occasion.

\* \* \* \*

Ex-Governor Shepherd, formerly of Washington, has lately returned from Mexico to the capital. The ex-governor has some of the most valuable mining interests in the Mexican Republic. He says when he first went to Mexico, eight years ago, he had to travel for forty days in wagons from San Antonio, Tex., to Chihuahua, while on his return trip, a few weeks ago, he bowled along over 1,200 miles of excellent railway without a jar or a scratch or without missing a single connection. The building of the Atchison, Topeka and Santa Fé Railway, he says, opened up a vast field of productive land to the emigrant. Along its line of 1,200 miles all kinds of grain grow in profusion, while the line of road is dotted with thriving towns and settlements every ten or fifteen miles. He is sure that an American who respects himself will be respected in Mexico. The feeling of the better class of Mexicans for the United States is friendly and social. The country is quiet and peaceful, and he thinks safe from the confusion and disasters of the revolutions so frequent in the past.

\* \* \* \*

The Treasury Department is at present giving some attention to the Emigration Commission. Heretofore this commission has had full swing, doing about as it pleased with the ignorant immigrant seeking a home under the free republic. It is charged that the commission makes terms with the railroads to the disadvantage of the immigrant, causing him to pay as much for a seat in the immigrant car, traveling at great discomfort and slow rate, as is charged for a first-class seat in an easy, swift-going Pullman, and that he is bled in various ways at the pleasure of subordinates, such as charging a higher rate of percentage for exchange than the banks and extorting large amounts for baggage transportation and like impositions. This commission is appointed by the State, but does business under the jurisdiction of the Treasury Department.

\* \* \* \*

At one time the State of New York imposed a tax of fifty cents per head upon all immigrants, but the Supreme Court of the United States decided that such action was unconstitutional, therefore Congress in 1882 authorized the collection of a similar tax by the United States authorities in connection with State boards. Under this law the commission acts. This tax amounts to quite \$200,000 from Castle Garden alone. Out of this fund expenses are met. The actual working commissioner receives a salary of \$4,500 per year, while the salary list runs up to about \$70,000 or \$80,000 per year, and in addition to this the government of the United States pays \$8,000 annual rent for Castle Garden. By a sixty days' notice the government's contracts with the State Board may be ended and all authority be taken away from the State Board of Immigration, and it looks as if this might be the result of the present investigation.

\* \* \* \*

The matter of foreign immigration is assuming serious proportions and is coming to the front as a matter for wise legislation. Already a party has been inaugurated in the State of California, with a sort of Know-Nothing platform as its guide. People of American birth are becoming alarmed at the great tide of foreign-born humanity that is constantly being borne in upon our shores. For the year ending June 30, 1887, 483,116 immigrants landed in the United States. American workingmen are beginning to growl about this great influx. They say the majority of foreigners now swarming in are of bad reputation; that they have no trades; that they are indolent and thriftless, and in many cases criminal; that they are willing to work for a pittance, living in the dirtiest and most depraved portions of the crowded cities. Such people, they complain, are a detriment to the nation, because they cannot be taught lessons of patriotism nor have

they any love for republican institutions; and, furthermore, they push to the wall the patriotic workingman who loves his country and is proud of his home.

\* \* \* \*

A few days ago the Attorney-General gave an opinion with reference to the rights of aliens in real estate. The last Congress passed a law prohibiting aliens from acquiring or holding real estate in the United States. With reference to this law the Attorney-General in his opinion concludes as follows:

1. As mines are real estate, or inheritable interests in real estate, the act does not apply to them.

2. As stock in a corporation is personalty, an alien can lawfully have, own and hold shares of stock issued by the American corporation, which is now the owner of mineral lands in Territories; but if the holding by aliens exceed 20 per cent. such corporation can neither acquire, hold, own nor hereafter acquire real estate while more than 20 per cent. of the stock is held and owned by aliens.

3. Under the act the advancement of money hereafter by aliens for the purpose of developing mining property is lawful, but no interest in the real estate can be acquired by such advancement, nor would an alien have the right to purchase the real estate, nor any interest therein, on a loan made since the passage of the act, even if sold on his own security or lien.

4. Aliens may lawfully contract with American owners to work mines by personal contract, for hire, or by bona-fide leases for a reasonable time.

\* \* \* \*

The second annual report of the Commissioner of Labor will soon be published. It is an interesting document, giving as it does a history of convict labor in the United States. From the report it is shown that the total number of prisoners of all grades employed in the prisons comprehended in the report is 64,349—the males, 58,454, and the females, 5,895. Of this total number 45,277 are engaged in producing labor of some kind, 15,100 are engaged in prison duties, and 3,972 are sick or idle. Of the total number 14,827 are employed under the public account system, 15,670 under the contract system, 5,676 under the piece system and 9,104 under the lease system. The State having the largest number of convicts in the institutions considered is New York, its total being 9,703. The total value of goods made and worked by productive labor in the penal institutions of the whole country is \$28,753,999. It took 45,277 convicts one year to produce this total value. It would have taken 35,534 free laborers to have produced the same quantity of goods in the same time; or, in other words, a free laborer is equal to 1.27 convicts, or, to reverse the statement, one convict is equal to .78 of a free laborer.

\* \* \* \*

The State producing the largest amount of convict-made goods is New York, the value there being \$6,236,267. Indiana comes next with a product of the value of \$1,570,901, while Ohio stands next with a product of the value of \$1,368,122; then Missouri, \$1,342,020; then Pennsylvania, \$1,317,265; Kansas, \$1,270,575; Tennessee, with only \$1,142,000; then Michigan, \$1,087,735, and last producing over a million dollars' worth, New Jersey, \$1,019,608. Boots and shoes lead, the product being \$10,100,275, or 35.13 of the whole product of the penal institutions of the country. The next largest item is the manufacture of clothing, which is \$2,199,634, while carriages and wagons are manufactured to the value of \$1,989,790. In all industries the product is less than \$2,000,000, the smallest being lumber. In his report the commissioner has much to say with reference to the several systems of employment now in vogue among convict laborers, finding much to condemn in each of them. He does not believe that convict labor should be brought into competition with free labor. The plan which finds most favor with the commissioner is that of hand labor under the public account system. This method involves the carrying on of the industries of a prison for the benefit of the State without the use of power machinery, tools and hand machinery only being allowed.

\* \* \* \*

The July report of the Department of Agriculture seems to have stirred up many Southern tobacco buyers. The department is charged with overestimating the acreage of the tobacco leaf crop in the United States by 100 per cent. and the result of this, it is said, is to keep prices down, to wrongfully transfer millions of money from holders to consumers and from American producers and dealers to foreign buyers. The officials of the department insist that they are better judges of the tobacco yield than speculators and tobacco dealers in certain sections of the country. Officials also state that it has always been difficult to get reliable statistics of the tobacco crop. It is the one crop upon



which a heavy tax is levied. No tobacco leaf can be sold by the farmer until a tax of eight cents per pound is paid upon it. The tax amounts to as much as the cured tobacco on the farm is worth. Of course the tax is paid by the dealer and not by the farmer, but nevertheless the fact remains that on account of the tax it is difficult to get at the exact amount of the crop; the farmer does not want to tell up to the full figure. The tobacco tax yields about \$30,000,000 or \$40,000,000 per year to swell the surplus of the Treasury, and is mostly collected from the Southern farmers.

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Assistant-Secretary Maynard, of the Treasury, a few days ago gave a hearing to representatives of importers of Sumatra tobacco and of growers of domestic leaf tobacco in regard to the general question of a proper method of determining the dutiable value of Sumatra tobacco. The New York importers ask that the present regulations of the department, requiring a close inspection of all bales, be modified so that all packages which do not contain 85 per cent. of wrappers be admitted at the rate of thirty-five cents per pound. The Leaf Tobacco Board of Trade urged that the department insist on its former ruling that Sumatra tobacco wrappers, no matter how packed, shall be assorted and made to pay duty at the rate of seventy-five cents per pound.

\*\*\*

The Bureau of Statistics has furnished the following report of the imports and exports of the United States for the fiscal year ending June 30, 1887: Exports of merchandise, \$716,704,984; imports, \$692,259,951; excess of exports, \$24,445,733; gold exported, \$9,701,187; imported, \$42,908,901; excess of imports, \$33,207,714; silver exported, \$26,296,504; imported, \$17,260,191; excess of exports, \$9,036,313.

\*\*\*

Reports received at the Post-Office Department show the gross postal receipts for the quarter ended June 30, 1887, of thirty of the larger post-offices in the country to be \$4,581,611, the percentage of increase, as compared with the corresponding quarter of last year, being 8 $\frac{1}{10}$  per cent.

\*\*\*

Dispatches have been received at the Department of State from the United States Minister to Belgium announcing that the government of that country has increased the import duty on coffee, cattle and meat, and that after the 1st of January next meat will not be permitted to enter Belgium except in the form of whole animals and halves and fore-quarters of animals, and then only when the lungs are attached.

\*\*\*

The United States consul at San Salvador makes report to the Department of State that products of American toil, skill and industry are supplanted in Salvador and it is thought everywhere in Central America by base imitations. Iron machetes are substituted for those of steel as manufactured in Connecticut and New York. The trade-marks of American artisans are stamped or imprinted on the worthless German implements. He says 50,000 machetes are sold annually in Salvador at an average price of three dollars and a half each. American osnaburgs, sheetings, muslins, and calico are driven out of Central American markets by goods bearing the brands and trade-marks of the best American mills. These worthless German goods are made of East India and Egyptian cheap short staple cotton and are utterly valueless. Very inferior German claret is sold bearing the trade-mark of the best wine-growers of California. Bottles bearing the labels of St. Louis brewers and Kentucky whiskey distillers, filled with vile imitations, made in Germany, are sold for the genuine American articles. Cast-iron sewing-machines, wares, axes, and beverages, are supplied by Germany.

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Consul-General Armstrong, at Rio de Janeiro, Brazil, gives some interesting facts about the sugar industry of that country. He says Brazil at present exports annually from 200,000 to 300,000 tons of sugar, corresponding to about one-fourth of the quantity consumed in the United States. It possesses vast tracts of land admirably adapted to cane culture, so that with remunerative prices and an adequate supply of labor it could easily furnish all the sugar needed for our consumption beyond what is produced on our own soil. As it already supplies us with the greater part of the coffee which we consume, and, although the balance of trade is now largely against us and the increased consumption of Brazilian sugar would greatly augment the amount of our

importations from Brazil, there can be no doubt of our ability to ship to this country merchandise at least equal in value to that which we should receive therefrom, if the Brazilian Government, to save its sugar industry from ruin, should admit our products on terms that will enable us to undersell our European competitors. This we hope to do finally in every case, but a commercial treaty, properly framed, would permit us to accomplish immediately that which must otherwise be the result of many years of toilsome and unremitting labor.

\*\*\*

Secretary Fairchild has issued a circular announcing that the interest due September 1 and December 1, 1887, on the 4 $\frac{1}{2}$  per cent. bonds of the United States, October 1, 1887, and January 1, 1888, on the 4 per cent. bonds, and January 1, 1888, on the bonds issued in aid of the Pacific railroads, will be prepaid on and after August 15, 1887, with a rebate at the rate of 2 per cent. per annum on the amounts prepaid. Proposals are asked for the sale of government bonds for the sinking fund. Secretary Fairchild says the anticipation of interest is for the purpose of getting rid of the surplus. The latter operation, he says, is only what any good business man would do to discount his obligations. The anticipation of interest is one of the two means given to the Secretary of the Treasury for disposing of the surplus funds, and he regarded it as the cheapest and most advantageous. The interest covered by the circular amounts to \$22,319,784. It is not possible just now to state the exact amount of the rebate. The sinking fund requirements will amount to about \$26,000,000 in addition to the \$20,000,000 of 3 per cent. bonds already applied. The surplus, says Mr. Fairchild, can be put out only through the co-operation of the bondholders, and if they do not accept the terms of the proposition made to them it would seem that they are not in very great need of money.

\*\*\*

The decrease in the public debt during the month of July amounted to \$4,844,894.83; the debt, less the cash in the Treasury, is \$1,279,428,737.02. The total net cash in the Treasury on the last day of July was \$45,698,594, or about \$5,000,000 more than a month ago.

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The United States consul at Shanghai cables the State Department that some high Chinese officials will arrive at San Francisco about the last of August on important business. He asks for them a cordial reception.

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Since last issue the following appointments have been made in the consular and diplomatic service: John G. Walker, of Texas, to be secretary of legation and consul-general at Bogota; Thomas Barbour, of Virginia, to be consular clerk at Bogota; Charles Chaille Long to be secretary of legation and consul-general at Corea.

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Rear-Admiral Chandler, commanding the Asiatic station, reports to the Navy Department that the Omaha arrived at Nagasaki from Yokohama on June 30, and the Marion at Nagasaki from Chemulpo July 20. He intended shifting his flag, pending the repairs to the boilers of the Brooklyn, to the Essex, upon which he would sail July 7 for Nagasaki. He would then shift the flag to the Marion and dispatch the Essex to Chemulpo, Corea. The Brooklyn would follow to Nagasaki as soon as her repairs are completed. The Monocacy and Palos would remain at Yokohama awaiting instructions from the department as to repairs.

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The United States steamship Trenton sailed on July 26 from the Norfolk Navy Yard for Rio de Janeiro, with the relief officers and crew for the Lancaster. The United States steamship Thetis sailed on July 25 from Montevideo for Valparaiso. The United States steamship Adams arrived at Honolulu June 14, twenty-eight days out from Acapulco. Rear-Admiral Franklin, commanding the European squadron, reports the arrival of the flagship Pensacola at Leghorn June 27. The Quinnebaug arrived at Lisbon on the 18th, having touched at Gibraltar and Tangiers en route. She would await the arrival of the relief crew at Lisbon. The United States steamship Alliance has arrived at Rio de Janeiro. The Navy Department was informed, July 19, that Commodore Kimberly, commanding the Pacific squadron, sailed in the flagship Vandalia from Callao for Honolulu. The Navy Department is informed of the arrival of the United States steamship Essex at Chemulpo, Corea.

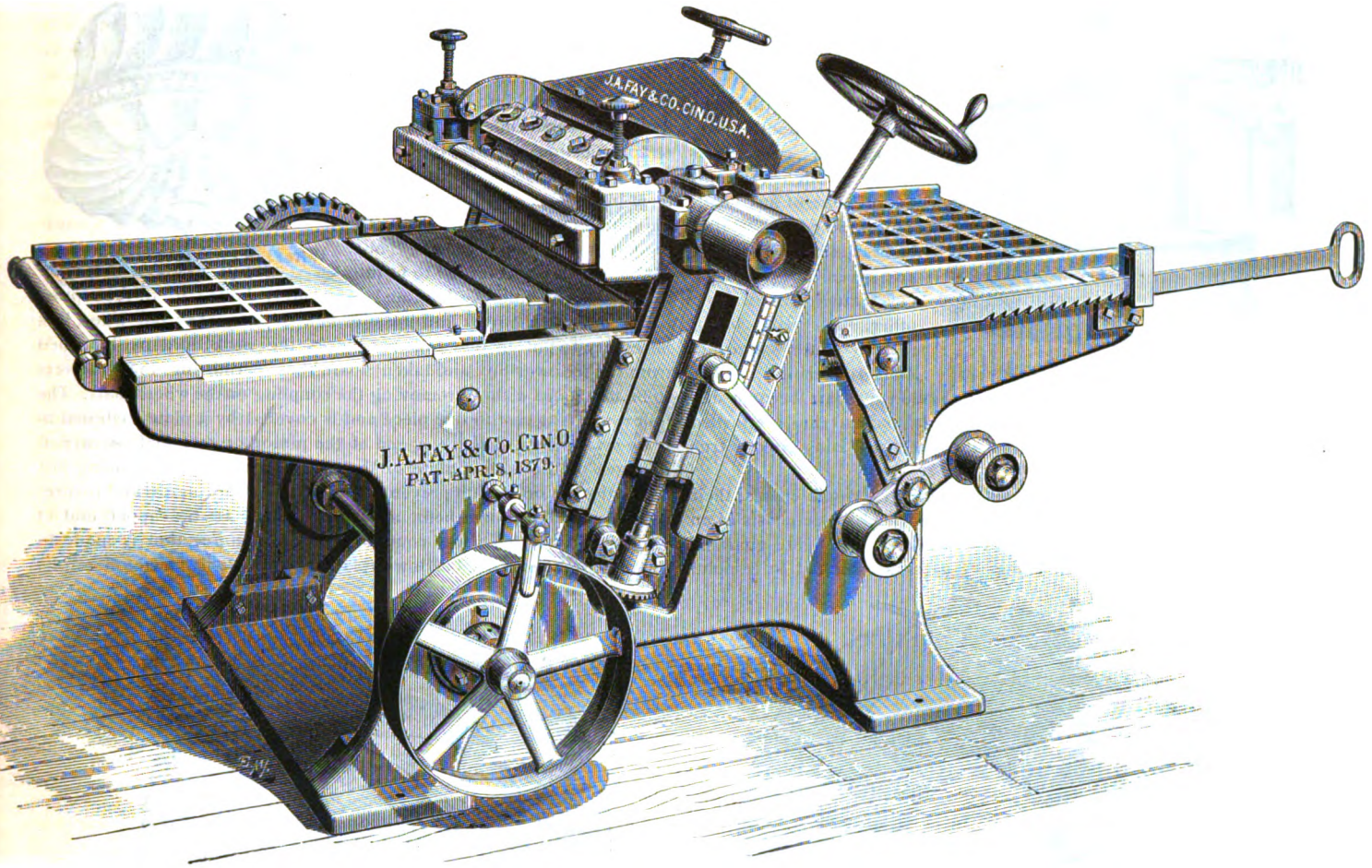
M.



## Engineering and Machinery.

### Endless Bed-Surface Planer.

**A**N illustration is given of a No. 6 Patent Endless Bed-Surface Planer, manufactured by J. A. Fay & Co. This is a newly designed machine, built from new patterns and drawings, intended specially for planing mills, carriage, box and furniture factories, agricultural shops and wherever a substantial machine of large capacity is needed. The frame of the machine is massive and heavy and has a



ENDLESS BED-SURFACE PLANER.

large floor base. The apron or bed is made to remain in a fixed position at all times. The lags are made of superior quality of iron, with the bearings on the ways plated with steel. The slats are made especially heavy, and the surface is almost as hard as tempered steel. The cylinder is of large diameter, carries three knives, pulleys for two belts, and runs in large self-oiling bearings. It is mounted in a cylinder frame, which is made to raise and lower by means of a hand-wheel. A pressure-bar is placed before the cut, and a pressure-roller with elastic spring tension controlled by the screw and hand wheel, readily secures any amount of pressure desired. The cylinder-frame, carrying the cutters, is heavily gibbed to the sides, and is securely connected front and rear, and will be found as substantial in planing at its highest as when at its lowest point. The cylinder and pressure-bar are made to adjust simultaneously to the thickness of the cut by one movement of the hand-wheel. This machine will work up to twenty-four inches in width and to eight inches in thickness. The pressure-rolls are made of wrought iron. The feed is started and stopped by means of our improved binding-lever. A countershaft placed upon the floor in the rear supplies power to the cutter-head. The tight and loose pulleys are 12 inches in diameter and 6 inches in face, and should make 900 revolutions per minute. This is only one of the numerous wood-working machines which are made by this firm. The line comprises planing and surfacing, molding, tenoning, boring, mortising and sand-papery machines, sawing machinery, &c.

### Pulley Lathe.

**T**HIS machine is designed for boring and turning pulleys at one operation. The swing is 30 inches, with a bed 7 feet 4 inches long and 18 inches deep. The design is of the "trunk type," very strong and rigid, braced to resist the greatest strain to which it may be subjected. The top of the bed is 19 inches wide and the sides 1 1/4 inch thick, with shelves extending out on either side 12 inches, making extreme width 43 inches. The shelves carry the two rails, saddles and tool posts, and are provided with slots 1 1/4 inch wide by 12 inches long, for the purpose of moving the rails from and to the work.

The rails may be set parallel with the spindle or at any angle required, and locked to the shelves by means of bolts which pass through slots in the shelves. The head stock has a front bearing 12 inches long, and a base bearing 5 inches long, bored 3 1/2 inches to receive a steel spindle of the same diameter. The spindle is 32 inches long, with a hole in the end as in ordinary lathe spindles. The gears are all cut from the solid metal, insuring smooth running under heavy duty, and are proportioned to give the desired strength for heavy work. The driving pinions are of steel, cut from the solid metal. The feed mechanism has a range from 0 to 1/4 inch to one revolution of the spindle, one or two tools being operated at the same time, as may be desired. The thrust-plate on the end of the spindle is provided for against wear by being lined with composition metal, with suitable oil cellar, &c. The feed mechanism may be stopped or started without stopping the lathe or otherwise interfering with work to be done. The tail-stock arbor is driven by a shaft running through the bed parallel with its sides and provided with suitable gears. The boring bar-arbor is 28 inches long, has a bearing in the tail-stock of 24 inches and a boring capacity of 12 1/4 inches in depth, and is provided with an automatic feed, which can be set so that the simultaneous boring and turning of a pulley may be completed at the same time. The tail-stock may be moved along the bed without disturbing the feed mechanism or stopping the lathe. The boring-bar is supported by a gland or bush-ring in the centre of the chuck.



### The "New American" Turbine.

**G**REAT success in developing the usefulness of turbine water-wheels for communicating power has given to American manufacturers a world-wide reputation. Without in any way detracting from the value of other wheels of this class, it may be said that the "New American" turbine, manufactured by Stout, Mills & Temple,

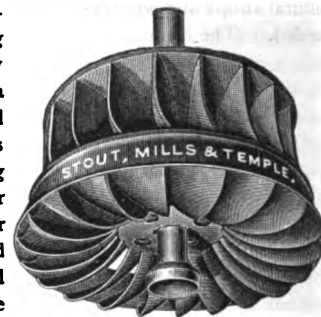
has special claims to attention, and has distinguished itself as a motor of the first order.

This wheel is a solid or continuous casting, formed entirely by dry sand cores, which give a perfect wheel, with even, true and smooth surfaces, and guaranteed strong enough to stand the pressure of any head. This method of casting insures that all wheels of any given size shall be exact duplicates of each other, their parts being thereby interchangeable and rendering it unnecessary to buy an entirely new wheel should any part become disabled.

The wheel is bored, fitted to its shaft, and the rims are turned off, using the shaft as an axis, so that the wheel will run perfectly true in the case.

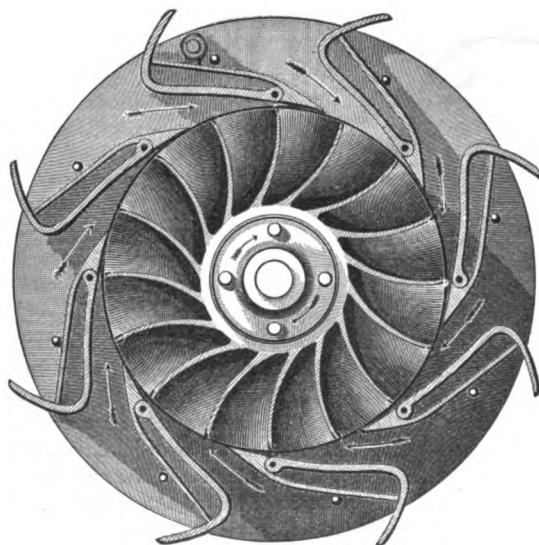
The wheel-case contains from six to ten graduated chutes, their number depending upon the diameter of the wheel, and consists of an upper and lower plate connected by "fenders" or "gate guards," and is cast in one piece. The chutes or gates are hinged at a point

means of a segment and pinion, giving a reciprocal motion to the levers, thus opening and closing the gates. The ring is cast in one piece, with a continuous double flange or two projecting plates, between which are held one end of the levers by a set screw passing through both flanges; by this means the levers are entirely prevented from becoming detached from the ring, and a very large bearing surface is obtained for the latter. The levers are made of the best wrought iron, and sufficiently heavy to be perfectly rigid, preventing their getting out of shape, and being perfectly fitted to the gates and ring the gates will always shut perfectly tight. The top of the dome has a projecting flange which is faced and bored to receive the neck, which is divided vertically into halves having flanges at each end, and the lower end projecting below the lower flange, this projection being turned to fit into the top of the dome, and the flange faced off and held to the flange on the dome by heavy bolts. The upper flange is turned to fit into a recess in the follower-box, and is securely bolted to it, thus practically making the neck and follower-box in one piece; but when it is necessary to put in new follower-blocks the neck may be loosened from the follower-box and taken apart, thus permitting the followers to be taken out without removing the coupling on the wheel shaft. The follower-box is cast in one piece and is covered by a plate fastened to it by set screws. The lower end of the pinion or gate shaft is carried in a step on the bottom plate of the case, and also has a bearing just below the pinion, which prevents the shaft from springing and insures the pinion and segment being always in gear. To the upper end of pinion shaft is fitted a face coupling, by which connection is made to the upper gate shaft. The lower plate of the case is faced off on its

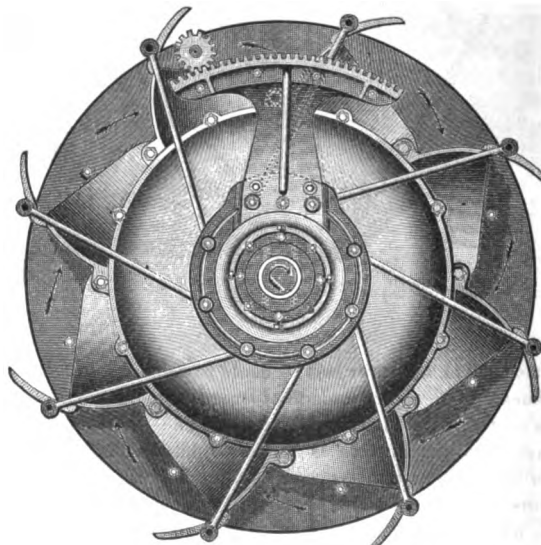


WHEEL REMOVED FROM CASE.

NEW AMERICAN TURBINE.



HORIZONTAL SECTION OF CASE.



CROWN PLATE AND GATE-OPERATING MECHANISM.

near the inside of the case or point of depletion, and as the gates are opened and closed the chutes move with them, thus applying the water in gradually expanding or contracting veins which are equally distributed around the wheel. The fenders or guards behind the gates relieve them from the hydrostatic pressure of the head, consequently the gates are easily opened and closed by the ring and lever operated by a segment and pinion, shown in the cut of the gate-operating mechanism. That part of the upper case-plate or rim which extends above the curved top of the chutes, as shown in the full view of case, is counterbored or rabbitted to receive the dome or crown plate, the edge of which is correspondingly rabbitted to fit it, thereby relieving the set screws of all transverse strain, their office being simply to hold down the dome, consequently it cannot become loose, a very important feature. The dome carries the ring, levers and segment for operating the gates. The ring is moved in the segment of a circle by

under side to receive the flange of the cylinder, to which it is held by set screws. This flange is faced off on both sides at right angles to the wheel shaft, and rests upon the cant on the floor of the flume, and if the cant is level the case will set perfectly plumb. Inside of the cylinder and at the lower end are projecting palms corresponding to palms on the ends of the spider or bridgetree. These respective palms are bored and turned to gauge, thus making the bridgetree fit perfectly into the cylinder, and is securely held by bolts through the palms. The hub of the bridgetree is bored out to receive the step thimble, which is turned to accurately fit the hub, thereby bringing the step exactly in the centre, and requiring no lateral adjustment. In the bottom of the bridgetree hub is a large square-threaded screw, by which the step and wheel may be adjusted vertically.

This wheel is notable for economy in the use of water, its power, steadiness of motion and strength.



### Globe Rotary Boiler.

**A**n illustration is given of a Globe rotary boiler, 14 feet in diameter, as manufactured by the Erie City Iron Works.

The boiler is of  $\frac{3}{8}$ -inch iron, triple riveted with  $\frac{3}{8}$ -inch rivets, the riveting being done by steam wherever possible. The plates are pressed into shape after being thoroughly heated at an even temperature in a large furnace used for this purpose, so that there can be no inequality of the temperature at the time. The bearings are made of cast-iron of large diameter and constructed as heavily as is consistent with good workmanship; they are attached to the boiler by means of heavy cast-iron flanges of large diameter and are securely riveted to the boiler. The man-hole is of ample size, and, it will be seen, is strengthened around the opening by a very heavy wrought-iron ring which is well riveted to the shell.

The concern mentioned also manufactures the "Standard" feed-water heaters, which are simply constructed and efficient in operation; also horizontal and vertical stationary boilers in steel and iron.

### Emery Wheel Surfacers.

**T**HIS is a substantial machine for the purpose. The base is not only heavy, but it has sufficient flare to give a solid floor foundation, which prevents vibration when being used. One end of the machine has a table 30 inches long by 15 inches wide, with an adjustable side guide for sliding the work over the wheel. The ends of the table have perpendicular supports extending downward, each with two slots, through which bolts pass to securely hold the table when set and prevent its springing under heavy weights. The table is raised or lowered by a screw worked by a worm and worm gear (or bevel gears), and is kept in line by having side guides running over a dove-tailed track on the end of the base. The opposite end of the machine is left open for miscellaneous work. The machine is used with solid emery wheels or with wood-covered wheels, with the ends of the spindle tapering to hold the wheels on by friction or with tight and loose collar and nut. The spindles are made both ways. The machine has a steel spindle long enough for a man to work at each end at the same time; it is 2 inches diameter and runs in self-oiling composition-lined boxes, 8 inches long and of improved design.

### Improved Sash-Sticking Machine.

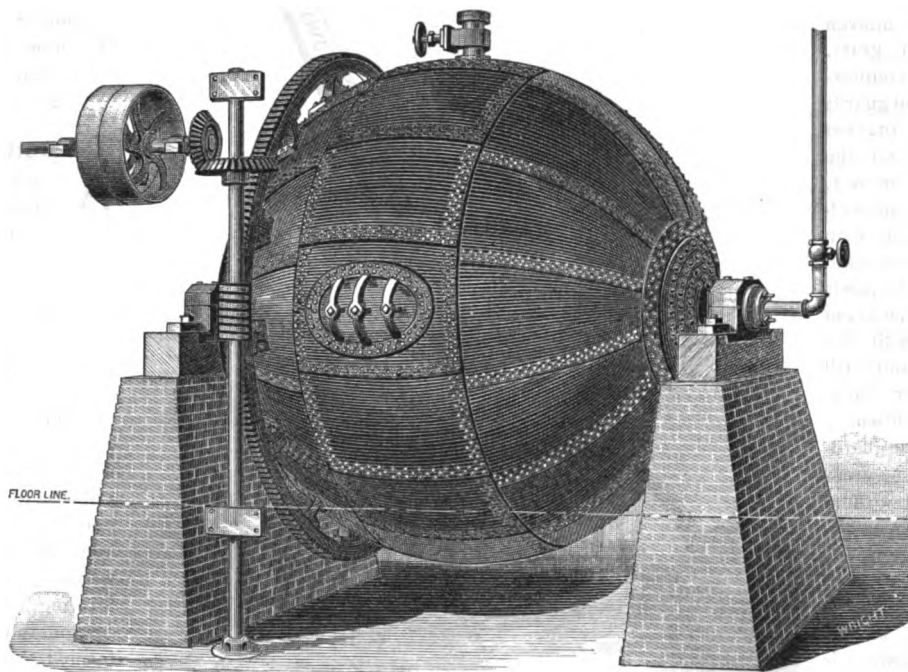
**T**HIS machine is designed to do the work which formerly required two machines and two men, and is a very efficient machine for sticking sash stiles, and plowing and boring for the sash cord at the same time. The cutter spindles are of best steel, run in long self-oiling bearings, which are lined with the best lining metal. The plowing and boring attachment consists of a supplemental table with vertical boring spindle and horizontal grooving head and spindle, placed at the feeding end of the machine. The table has a vertical adjustment, and is fitted with adjustable stops for gauging the length of the groove and position of the hole for the knot in the end of the cord. The stile is first moved along the table over the grooving saw, cutting the groove to the proper length, and then the boring is accomplished by means of a foot-treadle, raising the boring bit into the stile to the proper depth. This work being performed, the stile is passed

under the feed roll and horizontal cutter-head and properly dressed. As the plowing and boring of one stile is done while another is passing through the sticking machine, there is really no expense whatever attending the plowing and boring. A boy can operate the machine with ease. The feed roll is large in diameter and strongly geared, producing a positive feed. A compound bonnet and pressure bar is placed on the machine, which can be swung entirely out of the way for ready access to the sticking head for purposes of adjustment. The machine can be used for sticking door-rails, blinds, &c., by having suitable heads and cutters. Full set of wrenches, springs, &c., go with each machine. The manufacturers are J. A. Fay & Co.

### Pipe Threading and Cutting Machine.

**T**HIS machine is designed for cutting pipe from  $\frac{1}{8}$  to  $\frac{3}{4}$  inch, and is designed with much care and with special reference to doing good and rapid work. A feature of importance is the proportioning of the

speed and power so as to give practically uniform cutting speed for the different sizes of pipe, thus adapting it equally to either size. The chuck is arranged so that the gripping jaws are quickly and powerfully operated without stopping the rotating motion of the chuck, thus saving the time in stopping; also the screwing and unscrewing of the gripping jaws, as is the case with the ordinary pipe-machine chuck. The arrangement of the gripping jaws is such that they can be quickly altered to hold any of the various sizes of pipe, from  $\frac{1}{8}$  inch to  $\frac{3}{4}$  inch. The die-head has open or expanding adjustable dies in



GLOBE ROTARY BOILER.

halves, and of new design. These are so arranged on the face of the die blocks or slides that close threads can be cut. They are easily adjusted and opened instantly by the lever when the requisite thread has been cut, without stopping or reversing the motion. The dies expand wide enough to pass the pipe through for cutting off, and held clear of the chasers by special half-bushings for steadying the pipe while being cut off. The cutting-off arrangement is very complete; the pipe is steadied and released by the movement of a lever, and the cutting-off tool operates by another lever. The lever gives a quick and powerful movement, saving the time of screwing and unscrewing, as in the use of a screw movement. This machine is said to be a practical and reliable tool and adapted to all the various kinds of pipe-cutting with least loss of time, and when combined with No. 1 lever nipple chuck makes a very complete machine for making nipples  $\frac{1}{8}$  to  $\frac{3}{4}$  inch.

### Tempering Steel with Electricity.

**T**HE electric current has been applied by a Western concern to tempering watch-springs. A one-light dynamo is used and the conductors from the dynamo lead to a bench, on which stands an ordinary oil tempering bath. One of the conductors connects with a point within the oil-bath and the other to a point without. The piece of flat soft steel wire that is to be tempered to the blue color is fed under the contact point on the outside of the bath first and then under the one on the inside. When it reaches the latter the circuit is complete, and the wire immediately and uniformly becomes heated. The heating is uniform throughout the length of the spring and the process is rapid, the springs being heated at the rate of four inches a second.



## Hardware.

### Rowlett's Champion Lawn Mower.

THE lawn mower illustrated on this page is said to possess all of the important points required to make a perfect machine, with lightness in weight, lightness in running and attractiveness in finish. The drive-wheels are less than one inch thick on the face, of a sufficient size to give a high rate of speed to the reel, and driving from each side a continuous cut is obtained, turning either to the right or left. As it is a rear cut mower with an adjustable roller, the operator is enabled to cut a lawn smooth and to any height desired. The handle-arms are attached to the machine without bolts, screws or springs. The handle being in the centre of the mower, there is no side draft; by this device the handle has a floating motion sufficient to cut steep terraces or uneven ground, or topping high grass. The hood-washers are counter-sunk in the drive-wheel and guards surrounding the pins, to prevent the grass from catching on the spindle and clogging the mower. The pinion on each end of the reel-shaft works in conjunction with the case-hardened steel pawls and double-inclined ratchet. The pawls are positive in their travel, without springs and noiseless; with this improvement the reel stands still when running the mower backward or in transit upside down.

With the advantage of the guard-bar in front of the reel the grass can be cut clean from around shrubbery without scarifying it. The compactness of the mower at each end is a feature; the reel knives cut close to a walk or a fence. The adjustment of the lower knife to the reel-knives is very simple, and can be made at both ends of the mower without moving the same. The knives are made of the best spring steel and tempered; all of the material and work throughout is first-class, and all parts are made interchangeable. With all of the points of excellence and the many flattering testimonials to the merits of this mower, the Champion Manufacturing Company feels warranted in saying that it has what is required by the public for a first-class mower. Buyers are invited to write for prices and terms and a sample mower to the manufacturers, the Champion Manufacturing Company.

### Faucheuse de Pelouse Modèle "Champion."

NOUS donnons sur cette page l'illustration d'une faucheuse de pelouse sortant des ateliers de la Compagnie Manufacturière Champion. Cette faucheuse est légère, elle glisse aisément sur l'herbe, en même temps qu'elle est d'un fini irréprochable. Elle fauche l'herbe haute; les inégalités du sol ne dérangent nullement sa marche, ni les terrasses ou terres-pleins escarpés. Cette machine est dépourvue de ressorts et fonctionne d'une façon simple et efficace. Etant munie d'un garde-tour, cette faucheuse tournera autour des arbustes sans les endommager le moins du monde.

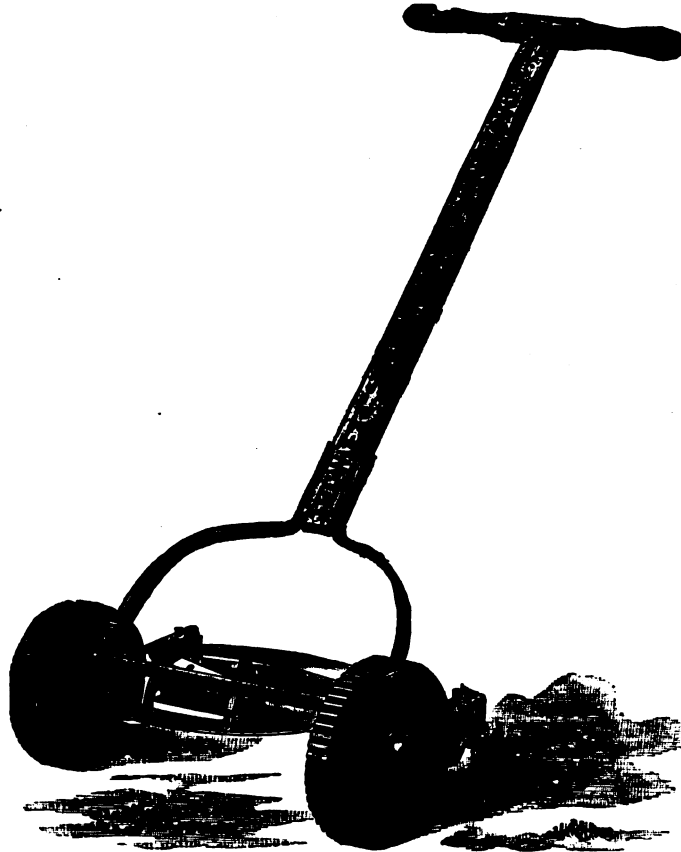
### Cortadora de Césped Modelo "Champion."

LAMAMOS la atención sobre el grabado que ilustra en esta página la llamada cortadora de césped modelo "Champion," fabricada por la Champion Manufacturing Company. Es de poco peso, funciona fácilmente y está primorosamente acabada; corta

yerba alta, no estorbándola suelo accidentado, ni los bancales y terraplenes escarpados. No tiene ninguna especie de resortes y su modo de funcionar es sencillo y eficaz. El guarda-carretel tiene la ventaja de que la cortadora pueda pasar al rededor de los arbustos sin perjudicar éstos en lo más mínimo.

### Champion Rasenmähemaschine.

WIR lenken die Aufmerksamkeit auf einen Holzschnitt, welcher auf dieser Seite eine Rasenmähemaschine veranschaulicht wie sie die Champion Manufacturing Company herstellt. Dieselbe ist leicht an Gewicht, läuft geschmeidig über den Rasen hin, verrichtet ihre Arbeit gerade so gut auf unebenem Boden, wie an Erhöhungen und Erddämmen. Sie bedarf Keiner Federn, ist einfach und verrichtet ihre Aufgabe gründlich. Die Schutzvorkehrung der Haspel gegenüber ermöglicht es, mit der Maschine um Gesträuche herum zu mähen, ohne dass diese im Geringsten beschädigt würden.



ROWLETT'S CHAMPION LAWN MOWER.

### Reversible Screw-Driver.

AN improved reversible screw-driver, adapted for a variety of uses, has been brought out. Besides the main bit the blade has side bits, either or both of them adapting the tool to be used in various positions and to be applied either longitudinally or sidewise to the screw. The handle is formed with a transverse socket, adapting it to receive a bar or lever when the main blade is applied sidewise to the screw. The wooden portion of the handle is fitted with annular cheek pieces, having inwardly projecting circular flanges, forming bearings for a circular casting, in which the socket is formed, the casting having ratchet-teeth around the centre of its outer surface, the wooden portion of the handle being further recessed to receive a pawl caused to engage with the ratchet-teeth by a rubber spring. Within the ferrule

is a spring for holding the blade in a position, and the socket in the handle is tapered at both ends to form a double or reversing socket.

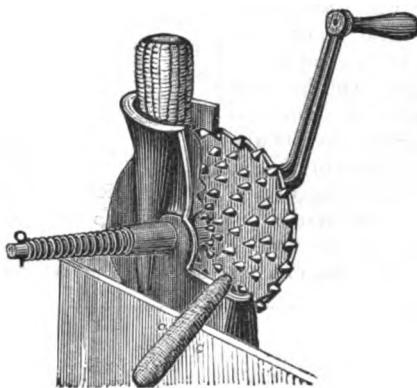
### New Spirit-Level.

A NEW spirit-level, designated in the trade as "Cook's Patent," is being introduced. The level differs in some important particulars from the conventional tool. The tube carrying the bubble is set in a frame, which is faced with glass on either side in the body of the stock. Accordingly, in using the level, instead of looking at the top and down into a narrow groove, as is usually demanded, the eye is directed to the side, and sees the bubble in a clear light, noting its position with reference to a mark around the tube. Two of these tubes are used in the level—one for levelling and the other for testing vertical lines. The parts holding the tubes are arranged with screws, which reach to the plate on the upper edge of the stock, so that the level is adjustable, thus making it possible to correct for any inaccuracy occurring from any cause. These features, particularly with respect to the location of the bubble and the chance to look through the glass plates, are especially desirable in miscellaneous lines of work and also in such special work as lining shafting. The level can be used in many positions which it is not possible with the ordinary article. This tool is handsomely trimmed with nickel-plated furniture, including end-pieces on the stock. Its neatness and convenience are not to be questioned.



**Wood's "Famous" Corn Sheller.**

**A**N illustration is given of Wood's Famous Corn Sheller, manufactured by the Garry Iron Roofing Company. This sheller is a simple and inexpensive device, designed to take the place of the larger and more expensive machines, doing its work perfectly and satisfactorily by leaving the corn and the cob separate. This is claimed to be the only hand-sheller which will perform this operation. This sheller is so constructed that any boy can take it apart and put it together again, as there are no small springs or pieces to get lost, mislaid or broken in the machine. All parts are made in duplicate, and the greatest damage done to it by careless or improper usage can be replaced at a slight cost. The cut shows its form and construction. The hopper has spiral-shaped ribs, which allow the corn to be fed down through without holding on to the ear, or any annoyance to the hand whatever. The capacity of the sheller is ten bushels an hour. The machine is composed of two main parts; the one is fastened to the box, and the other part is revolved. The sheller is warranted against breakage or getting out of order under any condition of fair usage.



"FAMOUS CORN SHELLER."

**Descascaradora de Mais Perfeccionada.**

**L**Á maquina que ilustramos por medio del adjunto grabado tiene por objeto quitar los granos de mais de sus mazorcas; es la llamada descascaradora Wood's Famous Corn Sheller. Es aparato muy barato, funciona con la mayor facilidad y si por casualidad se descompone alguna pieza, las hay de repuesto en casa de los fabricantes á quienes hay que acudir, puesto que esas máquinas se componen de piezas permutables. Se alimenta la máquina simplemente introduciendo la mazorca, sin necesidad de seguir teniéndola en la mano; la máquina quita todos, los granos hasta el último. Son fabricantes de ella la compañía manufacturera the Garry Iron Roofing Company.

:o:

**Verbesserte Maisentkörnungsmaschine.**

**H**IERMIT bildlich dargestellte kleine Maschine bezweckt die Entfernung der Körner von den Maiskolben. Dieselbe ist unter dem Namen Wood's Famous Corn Sheller bekannt. Es ist ein einfaches, höchst billiges Geräth, welches sich leicht handhaben lässt. Sollte zufälliger Weise irgend ein Theil derselben beschädigt werden, so wolle man sich an die Fabrikanten der Maschine wenden, welche das Ersatzstück sofort liefern werden, indem alle diese Geräthe aus austauschbaren Stücken bestehen. Der Maiskolben wird einfach in die Maschine gesteckt, ohne dass man ihn in der Hand zu halten brauchte, und jedes einzelne Korn wird durch dieselbe abgestreift werden. Man kann mittelst dieser Maschine zehn Buschel Mais per Stunde abstreifen. Sie besteht aus zwei Haupt theilen; den einen befestigt man an der Kiste, während der andere sich umwendet. Fabrikanten derselben ist die Garry Iron Roofing Company.

**Sheet-Metal Emblems.**

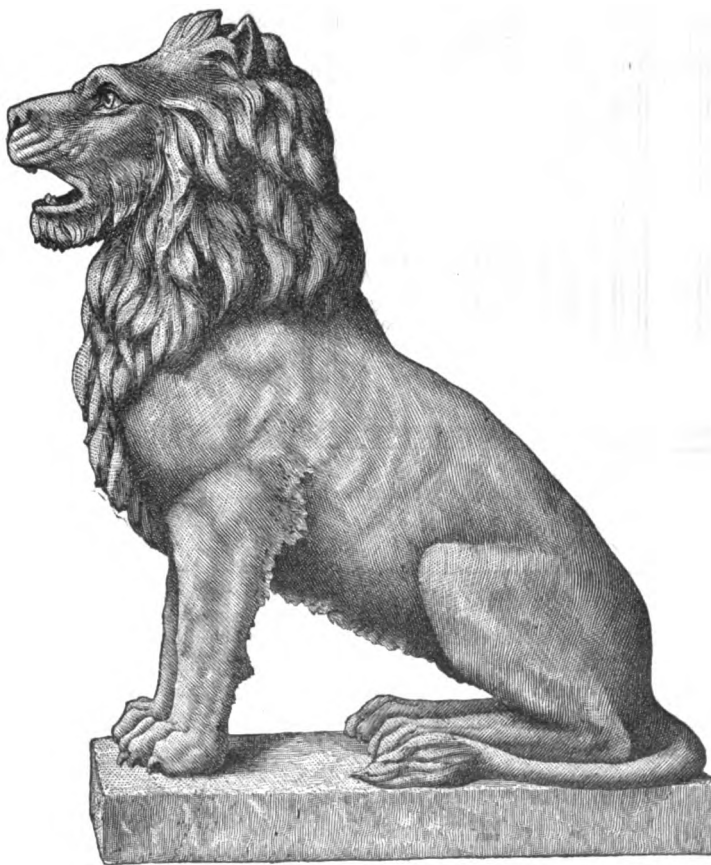
**A**BOUT business structures, as well also as in the decoration and finish of public buildings, there frequently arises the need of an emblematic figure or the effigy of an animal. The accompanying illustration represents a sitting lion, and is an example in point. It is selected from a catalogue of sheet-metal ornaments recently issued by Bakewell & Mullins, and is one of a large number of designs of work for which this firm has become noted. The advantage of work of this kind in sheet-metal work will be readily perceived when the durability of the material is considered, in connection with its light weight and the opportunity of finishing it in any style desired. Signs for different kinds of business are frequently made in this way.

The book referred to contains a large number of engravings, including designs of some very ambitious work, among which may be mentioned statues of Commerce, Industry, Liberty and Justice, and allegorical groups representing different subjects. For the most part the work represented is that which has been made for different public buildings, and in many instances the designs are accompanied by descriptions of the work and where it has been placed. The book is of great interest to architects, builders and sheet-metal workers generally, since it indicates the source of supply for work which is in very general demand. The designs are remarkable for perfection of modeling, beauty of outline, careful treatment of detail and artistic effect.

:o:

**Improved Combination Tool.**

**T**HIS is a compound tool, designed to serve the two-fold purpose of a stove lifter and means for tilting vessels provided with a hook on their outer walls. In construction the wire part of the device consists of suitable sized wire, which is bent about midway its length, and a sufficient portion of its free ends brought together and spirally twisted to form a shank. A suitable opening is left between the wires in the twisted shank to admit of a rivet or pin to key it into the handle. After the shank has been inserted into a ferruled handle, the rivet or pin is passed through the ferrule, the handle and the twisted shank, thus securing the shank in the handle. Both the handle and the ferrule may be of any approved construction. The arms converge forwardly from the base of the twisted shank to their outer or loop end, where they are bent upwardly and forwardly. By this construction it will be perceived that when the loop end is inserted



SITTING LION. —EXECUTED IN SHEET METAL.

in the recess of a stove lid the hand of the operator is not brought close to the heated lid, but the handle is carried off in a position oblique to the face of the lid or wall of the vessel to which it was applied. The device being made of wire it will not absorb enough heat to overheat or burn the wooden handle. When the device is applied to a handled vessel having a hook on its outer lower wall, the convex portion of the outer loop end will engage the vessel so as to prevent the hand being burned by the vessel or the steam rising from its contents.



## Flour Machinery & Processes.

### Milling on a Short System.

SINCE the spread of the process of reducing wheat to flour by means of roller mills there has been a great deal of effort to concentrate the details of the process and to limit to as great an extent as possible the machinery and cost of production. This has been done with a view to the needs of "small" millers, whose trade or location does not warrant the erection of large and expensive mills, but who feel the necessity of retaining local custom by the adoption of the best methods, if they can be brought within the limits of their means and opportunities. To this end what is known as the "short system" of milling has been applied, and this has several gradations, the general idea being the same. An illustration is given of a diagram for

from the wheat-bin to the finished flour and feed. The power required is from 15 to 20 horse-power. The machines specified are for a complete new mill, and parties who have any of these machines in their mill will find that the cost will be reduced just so much. All of the machines required for such a mill will be furnished in New York, boxed for ocean shipment, accompanied with drawings of the plan, showing the necessary elevators, spouting, &c., to place the same in working order in the mill building, by addressing the office of this paper.

### Short System of Bolting.

A SHORT system of bolting is described as follows: One reel scalper or grader for combined product of break scalpers, tail-over to go to coarse aspirating purifier, product to break-flour reel below. The reel should be clothed in a fine flour cloth at the head

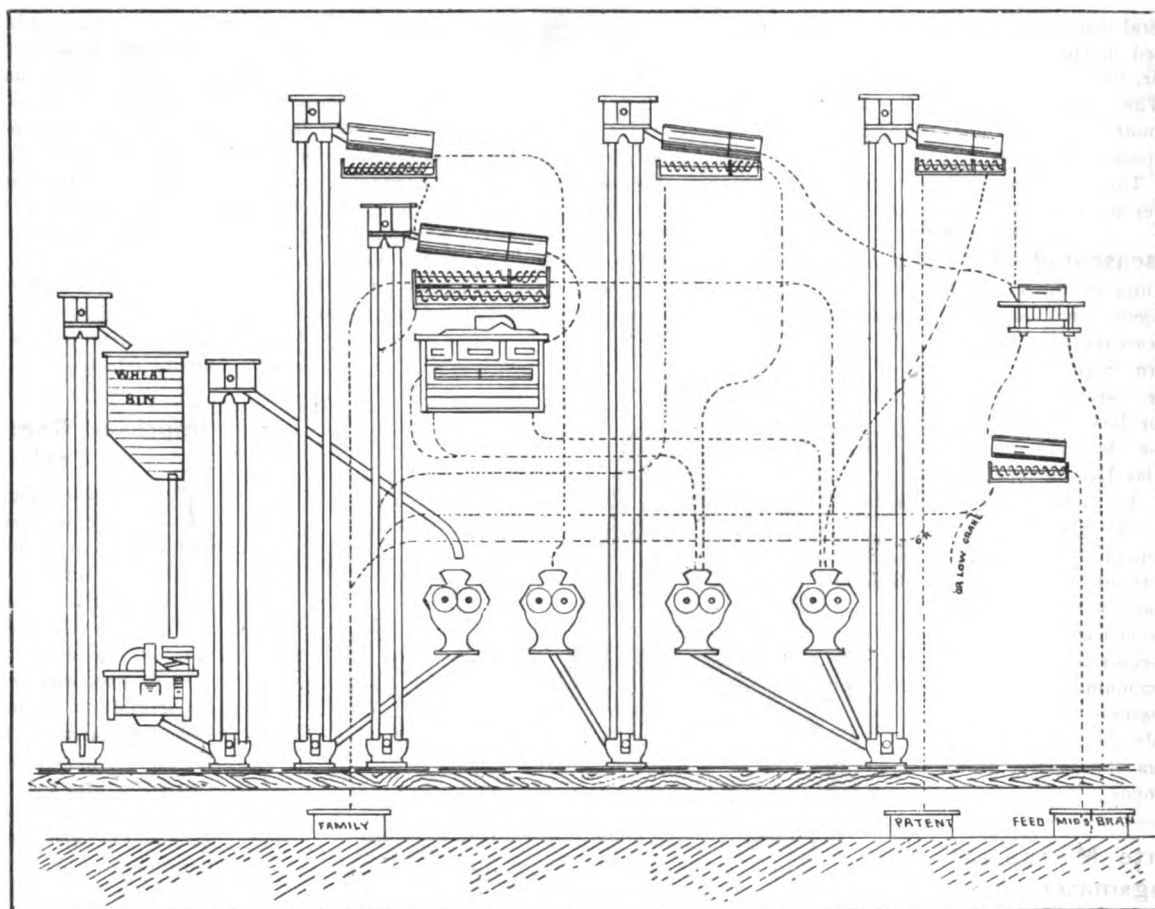


DIAGRAM FOR ROLLER MILL ON IMPROVED "SHORT SYSTEM."

roller milling on an improved short system, the arrangement being specially made for small mills grinding or reducing eight to ten bushels of wheat per hour or producing forty to fifty barrels of flour in twenty-four hours. The arrangement of the machinery for such a mill is clearly shown in the diagram, which includes everything save the building and power, and the machines required consist of four pair of roller mills, corrugated in a special manner; four reels for bolting flour, &c.; one reel for scalping-breaks, four elevators for flour and meal, one elevator for grain, one elevator for smut mill, one smut mill or wheat scourer, one purifier for middlings, one bran-duster.

This machinery, arranged as shown, will enable parties with limited means to operate a mill of the capacity stated, so as to compete with the extensive, elaborate and costly roller mills, and such an arrangement is said to have produced results as to quality of flour and economy and simplicity of construction unsurpassed by any plan yet devised. The power required is at least 25 to 30 per cent. less than that needed to treat the same quantity of wheat with millstones, and all skilled labor and loss of time in dressing stones is dispensed with, as none are used. Any intelligent miller can understand the diagram and follow the wheat

and dusting cloth at the tail. The flow of the reel should be to clean flour, to first centrifugal, and to fine middlings purifier.

The work of the second section of the mill should begin at this point. All germey middlings should go to first smooth rolls, and be floured and scalped at once. Send product of scalper to first centrifugal, and tail to bran duster. Send fine purified middlings to smooth rolls No. 2, and product to centrifugal No. 1. This completes the first reduction on middlings. It will be observed that three streams of stock are here sent to centrifugal No. 1. They differ but little, if any, and no damage to the flour need be apprehended, while a great saving in bolting machinery may be effected. The flow of reels should be to patent to clear flour to self, to keep it so full, and tail-over to second reduction rolls, the product of which send to second centrifugal to clear flour to self, and tail-over to third reduction rolls, the product of which send to third centrifugal. The flow of this reel should be to clear flour, to low grade, cut-offs, back to rolls, and to shipstuff.

If plenty of roll surface be used the foregoing plan will give good results in mills of any capacity up to seventy-five barrels. For larger mills it will pay to make more reductions on middlings and to make some changes in the flow of stock.



## Fancy Goods, Stationery & Paper

### Indurated Fibre Ware.

THERE are illustrated on this page an umbrella stand, a waste-paper jar and a spittoon, all manufactured out of indurated fibre, a composition of ground wood, pressed into shape, and treated so as to be water-proof. The umbrella stand and waste-paper jar are furnished either treated or otherwise, so that they can be decorated to suit the taste of the purchaser. There is no metal to rust or varnish; they will not break if tipped over or subjected to hard usage, while they are light in weight and attractive in appearance. The spittoons are neat, clean and attractive, and, above all, will not soak up any liquid.

These goods are having a large sale, and are especially intended for the stationery trade.

—:O:—

### The Edison Mimeograph.

THE Edison mimeograph is a reduplicating and copying machine, and its special merit is the ease with which the original copy can be made, as it does not interfere at all with natural handwriting.

Figure 1 shows the first step in the process—making the stencil or first writing. A sheet of specially prepared sensitized paper is laid on a finely etched plate, and a stylus or smooth pen, with a point of case-hardened steel, is used in the writing. The corrugations of the steel plate are so close as to be scarcely perceptible, and so cannot, of course, make writing on it difficult. The paper is pressed by

shown in Fig. 4. To produce more copies all that is necessary is to supply the paper and apply the ink-roller, for the same stencil will give as many as 3,000 copies. The appearance of the prints is clear and distinct, and the lines can be made as fine as with a steel pen. The copies can be made on paper of any size, from a small card to the largest office blank. This process is distinguished for its easy and rapid manipulation and the apparatus is durable and lasting.

—:O:—

### Postage-Stamp Sticker.

A N effective little machine has been devised for putting postage stamps in place upon letters. Measured on the base it is 4x6 inches, and its total height is about eight inches. The envelope upon which the stamp is to be affixed is first passed underneath the lower foot of the machine, and when a finger-piece is pressed down, it is drawn outward, which has the effect of moistening the corner. The postage stamps are placed with their gummed sides up, inside of the receiver, which is located under the upper foot of the machine. The envelope, after being moistened, is passed under the upper foot, and the upper finger-piece is pressed down, with the effect of bringing the moistened corner of the envelope in contact with the stamp. A slit in the stamp-holder shows the operator just how many stamps there are remaining in it, and in all respects the work is under

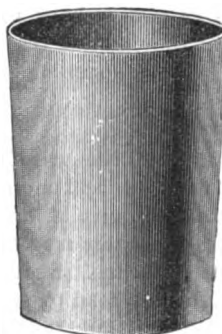
perfect control. The moistening is accomplished by means of a felt, which extends downwardly into a water-cup, the water being raised up to the proper point by capillary attraction. Once replenishing the water-cup, it is said, will answer for a month or more, even with



Umbrella Stand.



Spittoon.



Waste-Paper Jar.

INDURATED FIBRE WARE.

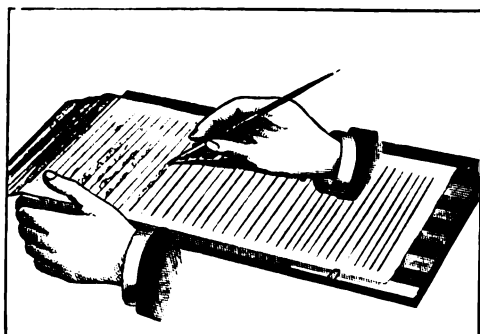


FIG. 1.

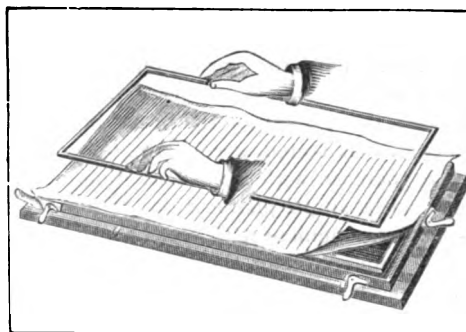


FIG. 2.



FIG. 3.

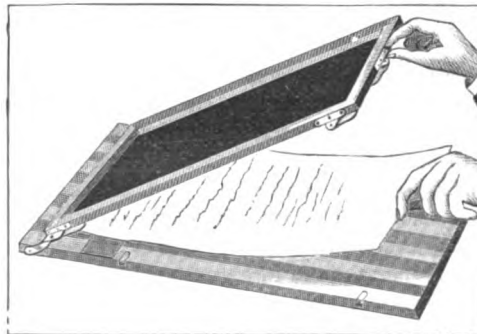


FIG. 4.

the stylus on the minute points of the plate, and thus becomes finely punctured.

The remaining steps of the process are here illustrated, but are so familiar as to hardly need explanation. The punctured stencil is placed in a conveniently arranged frame, and the paper to be copied upon beneath. Then by passing an ink-roller over the surface of the stencil, as seen in Fig. 3, an accurate copy can be quickly obtained, as

constant use. The machine is made of brass, nickel-plated, with japanned iron base. The parts are heavy and strong, and there is nothing about the machine that can get out of order. It is said to do its work in a very complete and satisfactory manner, and in a very small fraction of the time necessary to put the stamps in place with the tongue. The device is adapted for stamping newspapers and book packages as well as envelopes.



# The American Mail & Export Journal.

Publication Office: 126 and 128 Duane St., New York, U. S. A.  
Cable Address, Catchow, New York.

NEW YORK, AUGUST, 1887.

**R**ECENT seizures of British vessels engaged in sealing in Alaskan waters show greater forbearance on the part of our government than has been practiced by the Canadian officials with American fishermen alleged to have been guilty of fishing within prescribed limits, and yet there is a disposition to bluster over the action of the United States for preventing violations of the law within marine limits about which there can be no question. The seizures of sealers have not been made with any purpose of retaliation; they are the result of positive infringements of our statutes, and of poaching on what is known to be forbidden ground.

**M**R. EDISON, we believe, claims to point out the way for developing the latent energy of coal into electrical energy by economical methods. In another column we give a brief description of his apparatus, taken from a paper lately read before the Association for the Advancement of Science. Should it be demonstrated that Mr. Edison has found the road to success in this important field of scientific investigation and invention, another big step in industrial science will have been gained, one which will render the nineteenth century still more memorable for its record of progress.

**I**N last month's issue of THE MAIL we gave the features of the postal treaty with Mexico lately concluded, and premised that the treaty would lead to important changes in our trade with that country. The arrangement has only been a matter of experiment a few weeks, but in that short time it has developed its efficiency as a means of exchange of merchandise parcels, the growth of the postal business in this one particular being, it is stated, specially noteworthy. This may be expected to increase with each succeeding month, and there already seems to be ample justification for our suggestion that the parcel-post arrangement with Mexico is of more real importance to our commerce than the reciprocity treaty which has failed for want of needed legislation. The advantages thus assured must not be lost sight of by our merchants and manufacturers. There is an infinite variety of articles which can be expeditiously forwarded to Mexico, and the opportunities for securing trade should be zealously followed up.

**T**HE growth of the American leather export trade, as shown by the Treasury returns for the last fiscal year, is abundantly satisfactory. The increase for the year is \$1,617,000 in the value of leather exported, and a decrease of over \$1,000,000, amounting to more than 14 per cent., is shown in the value of the importations. The increase in exports, including goods manufactured, is somewhat more than 19 per cent. The following is a statement of our foreign trade in leather and its manufactures during last year, values given: Imports of leather, \$6,449,675; exports of leather, \$9,169,519; exports of boots and shoes, \$732,517; exports of leather manufactures, \$1,266,619; total exports of leather and its manufactures, \$10,436,138; difference in favor of exports, \$3,986,463. The growth of our foreign leather trade is not only gratifying to us, but it is distressing to foreign manufacturers. This is emphasized by one of the English papers, which recently commented upon the "giant strides the American leather industry is making." Yet there is abundant room for extension, and while we are increasing

our trade in leather pure and simple, our manufacturers into whose products leather enters as the material of first importance should be urgent in bringing their goods under the notice of foreign buyers, neglecting no opportunity for creating a market and taking advantage of those means which are available for this purpose. We have noted that little or no advertising with a view to claiming the attention of purchasers has been done, and for this reason, perhaps, as much as any other, the work of securing foreign markets has dragged. We can, however, assure dealers in boots, shoes and other leather articles that the American factories can supply goods which, as to quality and value, will compete with the goods produced in any other country, and of this they can be satisfied by making experimental purchases should they feel so inclined.

## OUR ASIATIC TRADE VIA BRITISH COLUMBIA.

**T**HE sudden inauguration of an important American trade movement with Asiatic countries via British Columbia and the Canadian Pacific invites attention to that portion of the Dominion. British Columbia is situated on the Northwest coast of North America and comprises the territory between the Rocky Mountains and the Pacific Coast, bounded on the north by the sixtieth parallel, on the south by the United States, the average breadth being about 250 miles, and the length of coast line 450 miles. The area (including Vancouver and Queen Charlotte islands) is about 350,000 square miles. The geographical position of British Columbia is very important, jutting out from North America as Great Britain juts out from Europe. The comparatively favorable distances across the ocean to Japan, China and Australia, the direction of the trade winds, the inexhaustible stores of coal, the immense fertile regions through which the Canadian Pacific Railway reaches the seaboard, linking the Pacific Ocean to the system of the St. Lawrence navigation on the eastern side of the American continent, are facts extremely favorable to the growth of a widely extended commerce.

British Columbia was constituted a crown colony in 1858, owing to the large immigration consequent on the discovery of gold in that year. In 1866 the colonies of British Columbia and Vancouver Island were united, and on July 20, 1871, British Columbia entered the Canadian Confederation, and is represented by three members in the Senate and six in the House of Commons of Canada. The population is about 70,000, of whom 30,000 or more are Indians, and at least 15,000 Chinese. The vast tract comprised within the limits of the province, extending as it does through nearly 12° of latitude, with a varying breadth and elevation, naturally affords a great diversity of climate. The warm, tropical waters of the Pacific Gulf Stream striking the coast give to Vancouver Island and the coast generally a mild and agreeable temperature; there is little frost or snow, and there is a difference of at least 10° of latitude in favor of places on the coast as compared with corresponding positions on the Atlantic Coast. The interior is subject to greater extremes both of heat and cold, but nowhere are the extremes so great as on the eastern slope of the Rocky Mountains; the climate is, for the most part, drier, and the snow falls consequently less.

Agricultural operations have been greatly extended during the past five years, and have proved the character of the land throughout the province to be admirably adapted for the culture of cereals, while large tracts of good grazing land exist in the interior. The trade of the province is developing rapidly; the exports amount to nearly four millions annually (a remarkable fact, considering the number of the population); these consist of minerals (chiefly gold and coal), sea products (chiefly salmon and oil), timber, furs, skins, &c. The imports amount to two and a half millions, principally from Eastern Canada, England, the United States, China, &c. The province has pro-



duced nearly fifty million dollars of gold, and although production has of late years been less than formerly, it is expected that the prosecution of quartz mining, now in its infancy, will in the near future be a most important industry. The lumber trade is fast attaining large dimensions, the annual shipments from the two principal mills amounting to over 30,000,000 feet. Timber is abundant in all parts of the province. The waters of the province teem with food fishes, besides salmon and herrings; there are large quantities of cod, bass, flounders, skate, sole, halibut, sardines and oysters. Whales are numerous, and the capture of the fur seal is an important industry.

As for the transit trade, Mr. Frazer, the New York agent for the Canadian Pacific Railway and Steamship Line, reported in July last that large quantities of Asiatic goods now reach the eastern ports of the United States by way of Canada. A considerable portion come by steamer direct to Vancouver, the western terminus of the Canadian Pacific, and thence are transported eastward by rail, while the remainder are entered at San Francisco from steamers of the Pacific Mail Steamship Company and are then re-exported in bond by the Pacific Coast Steamship Company to Vancouver. Hence, by an arrangement with the Canadian customs authorities and by the consent of those of the United States, the goods are carried by the Canadian Pacific east. For Chicago, St. Louis and cities in their vicinity the point of departure from the main line of the Canadian Pacific is Winnipeg. For New York, Boston, Portland and all cities in the Middle and New England States the goods leave Canadian territory at Brockville or Montreal. The fact is that merchants have found it cheaper and quicker to ship by the Canadian Pacific. That corporation, as stated before in these columns, has a line of four steamers plying direct between Vancouver and Hong Kong, Yokohama and other Chinese and Japanese ports, and they make better time than the leisurely run steamers of the Pacific Mail. The distance is also several hundred miles shorter, so that time and distance saved are both about one-third. Transportation rates, too, are reasonable. The steamers of the Pacific Coast line leave San Francisco every week, and the general agents there have given a bond to the United States authorities to cover any violation of the privilege to re-export merchandise from China and Japan, intended for points in this country, to Vancouver. At that point there is now stationed a customs officer, appointed by the Treasury Department at Washington to look after the interests of the American Government in the matter of Asiatic merchandise re-exported from San Francisco. Some time ago the attention of the State Department at Washington was called by Mr. Frazer and others to the desirability of having a consular agent at Vancouver to put proper seals on bonded cars and to receive, check and verify consignments and invoices on re-exported goods, the manifests to accompany each train. Charles M. Bolton has been appointed in consequence.

As we stated on a former occasion, the steamer *Abyssinia*, the pioneer boat of the new line, left Chinese and Japanese ports in May last with 2,500,000 pounds of Japanese teas and sixty-three bales of raw silk, straw-braid and other goods consigned largely to business houses in this country. The second steamer, the *Parthia*, left Hong Kong on June 7, Amoy June 9, and Yokohama June 20 with a full cargo of teas (3,250,000 pounds Japan, Amoy and Formosa oolongs and Hankow congous), with raw silk and sundries for overland points, and 250,000 pounds of tea for Pacific Coast ports. The *Parthia* carried twenty-two European, eighty-seven Chinese and ten Japanese passengers. The *Port Augusta*, of the steamship line, left Yokohama on July 13 with about 3,000,000 pounds of tea and 235 bales of silk, mostly for American points.

The Pacific Mail Steamship Company will, of course, not fail to reform its service, by seeing that the company's boats make better time in the future, or, if need be, are replaced by faster

vessels; but, however this may be, American trade has the benefit of quicker communication, lower freights and passenger fares, and we have no doubt that the great advantages offered our commerce with Asia will, at no distant day, be extended to our Australian trade, thus in a couple of years thoroughly revolutionizing and extending our business relations with countries brought so much nearer within our reach, and our domestic exports will also be a gainer by it.

#### LATE DEVELOPMENTS IN THE ARGENTINE REPUBLIC.

IN June last the Argentine Congress resumed its sessions and the new President, Dr. M. Juarez Celman, delivered his Annual Message, which chiefly dwells on commercial and financial affairs. While the cholera recently visited the country Brazil prohibited the import of jerked beef, an important article of export from the republic to that country, thus disturbing one of its main industries. Meanwhile a wild real-estate speculation began to rage at Buenos Ayres, fostered by an excessive issue of paper money and the continued considerable influx of immigration from Southern Europe. The paper money in circulation issued by the National Bank and provincial banks of issue amounts to \$90,000,000, and to this amount it is expected that the former will add from \$20,000,000 to \$40,000,000 during this year; the Banco Hipotecario, of the province of Buenos Ayres has issued \$100,000,000 "cédules," also paper currency, and since December last the republic has a Banco Nacional Hipotecario which in a couple of months put into circulation \$25,000,000 "cédules," and in the spring made preparations for a fresh issue of \$25,000,000. Before the current year closes some \$270,000,000, represented by paper currency, will thus circulate among a population of 3,500,000. This also explains why the gold premium does not decline from 132, the quotation in July. The Argentine Republic enjoys an excellent credit in Europe, and no doubt deserves it if we take into consideration its boundless, varied resources; but the reckless manner in which the finances have been managed for several years past, after the country had resumed specie payment, have forced upon the nation a return to paper money, leading to extravagant local speculation not only in gold, but as we have stated in real estate. In order to render things still more dangerous and precarious a terrible, prolonged drought has prevailed in the stock-farming regions, and the mortality among herds and flocks is declared to be unprecedentedly great on the "estancias"—at San Nicolas and in neighboring districts between 50 and 75 per cent.

Fortunately the country is at present politically quiet and may remain so, although revolutions during periods of public discontent have not been of rare occurrence. Argentine bondholders abroad, however, do not seem to lose confidence in the future, so long as the net immigration of hard-working settlers averages 100,000 per annum, as it still does.

The public indebtedness of the republic amounted last year to \$155,196,720. The budget for 1886 fixed the income at \$42,007,500, and the outlay at \$40,788,385. The President states that the actual revenue reached \$46,634,000, and the expenditure \$46,615,000, while in 1885 there was a deficit of \$3,552,000. The current budget estimate is \$51,000,000 income, and an equal amount of outlay. Each of the fourteen provinces has, besides, its own budget; thus Buenos Ayres, for 1887, estimates its income at \$7,489,656 and its outlay at \$7,400,076. Both the republic and the individual provinces are progressive, and too much so, the flush of success during late years stimulating activity overmuch, and thus tending to create an unsound state of affairs when something unforeseen occurs, threatening a great industry, like, for example, the raising of live stock.

According to the President's statement, the total foreign



trade was \$196,487,222 in 1886, including imports of \$20,635,662 gold, against \$176,101,069, inclusive of \$6,306,251 gold importations, in 1885, the imports in 1886, specie and bullion included, being \$118,294,353, and the exports \$78,192,859. In 1885 the imports were, in round figures, \$92,221,000, and the exports \$83,879,000. Following is a statement of quantities exported in 1885: Wool, 128,393 tons; cow hides, 2,742,771; sheepskins, 31,337 tons; horse hides, 373,365; other hides, 1,986; tallow, 23,260 tons; horse hair, 2,009 tons; jerked beef, 32,056 tons; cattle and sheep, 159,664 head; bones, 35,424 tons; linseed, 69,426 tons; wheat, 78,493 tons; Indian corn, 197,860 tons; horns, 1,260,593 kilograms, and ostrich feathers, 34,710 kilograms; specie and bullion, \$1,682,000. On closely examining the preceding figures it will be seen that cereals and linseed occupy an important rank in the general export movement.

The maritime movement has been no less striking. There left ports of the republic in 1885, 2,441 sailing vessels, of a joint tonnage of 600,858, and 6,549 steamers, of 2,748,803 tons; in 1884, 2,732 sailing vessels, with 589,269 tons, and 5,455 steamers with 2,263,023 tons. The increase in the latter was consequently something remarkable, and is unprecedented in any but American ports. The American trade movement with the Argentine Republic for the last two years was as follows:

	U. S. Imports.	U. S. Exports.
1886.....	\$4,354,880	\$5,020,835
1885.....	4,775,616	3,984,100

The inauguration of steamship communication with the United States via Brazil has so facilitated the shipment of American goods as to lead to the increase shown above.

#### PROGRESS OF BRITISH NORTH BORNEO.

IN our issue of October last, under the head of "A Rising Asiatic Settlement," we alluded to the new British colony in Borneo, with which eventually the United States will no doubt carry on a satisfactory if not extensive trade. On June 29 the general meeting of shareholders of the British North Borneo Company was held in London, and from the annual report for the calendar year 1886 there submitted it appears that the company exported \$524,734 worth of goods, against \$401,641 in 1885, \$262,758 in 1884 and \$159,127 in 1883, the imports amounting to \$849,115, against \$648,318 in 1885, \$481,413 in 1884 and \$428,919 in 1883. In 1881 the exports were \$145,444 and the imports \$160,658. The revenue proper of the company rose from \$110,452 in 1885 to \$132,235 in 1886, the land sales from \$2,863 to \$8,290, and the expenditures, which had been \$241,398 in 1885, were \$156,590 in 1886. In view of the rapidly growing importance of the colony, as revealed by the preceding figures, it may not be out of place to note some details relating to it.

A British settlement was formed under the East India Company in 1762 at the island of Balambangan, which had been ceded by the Sultan of Sulu. This was attacked by pirates in 1774, and the staff was removed to Labuan, a small factory being at the same time established at Brunei. A second attempt, in 1804, was made to establish a settlement on the former island, and on its failure the East India Company gave up its connection with Northern Borneo. Sir James Brooke, in 1840, established the independent state of Sarawak, which, as well as Brunei, is under the exclusive influence of Great Britain, and Labuan became a British colony in 1846. Some Americans obtained extensive cessions in 1865 from the Sultan of Brunei, but they were never utilized. Finally, in 1877 and 1878, the Sultans of Brunei and Sulu ceded the whole district to Alfred Dent, who transferred it to the British North Borneo Company, and some further cessions have since then been added to the company's territory. The latter (incorporated by royal charter under date of November 1, 1881) comprises the whole of the northern portion of the island of Borneo from the Sipitong River on the

west to the Sibuco River on the east coast, together with all the islands within a distance of three leagues, including those of Balabac and Balambangan. It is held under grants from the Sultans of Brunei and Sulu, and contains an area of about 29,688 square miles, with a coast line of about 900 miles. The principal stations of the company are at Sandakan on the east (where are also the headquarters of the administration), Rudat on the north, Gaya and Mempakol (in Brunei Bay) on the west. At each of these there are excellent harbors, especially at the first named, which is situated in a magnificent bay some fifteen miles in length, with an average breadth of five miles. It is 1,000 miles from Singapore, 1,200 from Hong Kong and 1,600 from Port Darwin.

The greater part of the country is at present covered with jungle, but the soil is found to be well adapted for the growth of almost all tropical products, more particularly tobacco, sugar, coffee, sago, tapioca, &c. The mineral resources of the country have not yet been fully investigated. Gold has been found in two of the rivers on the east coast; coal, copper and other minerals have also been met with, but so far have not been worked. The country is mountainous, although the shore is flat and fringed with mangrove. The highest point yet discovered is Kinabalu, 13,698 feet.

The inhabitants, who are supposed to number about 200,000, are mainly wandering Dajaks, who remove their villages periodically, and live by hunting and plunder, with occasional attempts at planting and trade. There are Malay and Chinese settlements on the coasts, which cultivate the flat areas, and carry on a considerable trade.

Agriculture is in a primitive state, but certain of the more advanced tribes use the plow. The chief products are sago, rice, pepper, tapioca, sweet potatoes, indian corn and sugar. Tobacco has been grown with success, but regular plantations of any kind are still scarce. The main trade is in the products collected in the jungles. The exports comprise sago, tobacco, gutta-percha, india-rubber, rattans, bee's-wax, edible birds' nests, camphor, rosin, mother-of-pearl shells, pepper, &c. A timber trade has been opened with both Australia and China. The company does not itself engage in trade. The revenue is derived from import duties and royalties on the various exports, a poll tax, licenses for the sale of opium, spirits and tobacco, and from the sale and rent of forest lands, suburban lots, and town sites.

The company has a copper coinage of half and one cent pieces, and it issues notes, expressed in dollars, to the extent of \$21,000. American dollars and British currency also circulate to some extent. There are no banks, but the company does banking business when required. Money orders on North Borneo are issued in England, and vice versa. The territory is administered by a court of directors in London, appointed under the royal charter, and a governor, colonial secretary and residents appointed by them. The appointment of the governor is subject to the approval of the Secretary of State. There is a force of 187 armed police under European officers. A European medical officer is attached to each residency. There is frequent communication by steamer with Singapore and Hong Kong, and occasionally visits are made by steamers running between Hong Kong and Australia. Field labor abounds at low wages.

The extraordinary progress which the Straits Settlements and Hong Kong have made during the past quarter of a century encourages the hope that after the new colony, now only six years old, shall be fairly under way it will not long remain behind the sister colonies named. So far as can be judged from the semi-annual reports, it is admirably managed under the directorship of Sir Rutherford Alcock, chairman of the court of directors, and there is no lack of capital to carry to a safe issue its brilliant destinies.



## U. S. Ministers and Consuls.

### Trade of Germany in the Year 1886.

CONSUL WAMER.

ACCORDING to estimates made from the official figures of the quantities of the imports and exports, the value of the trade of Germany, including precious metals, in the year 1886, was as follows :

	IMPORTS.		EXPORTS.	
	Quantity.	Value.	Quantity.	Value.
	<i>Tons.</i>		<i>Tons.</i>	
1886.....	16,940,488	\$703,510,864	18,924,284	\$740,638,864
1885.....	17,867,330	711,612,622	18,840,023	639,831,166
	-926,842	-8,101,758	+84,260	+46,807,698

The imports, as compared with those of the year 1885, show a decrease, while the exports have increased. In the year 1885 the balance of trade against Germany was to the extent of \$17,781,000; in 1886 the balance in her favor was \$37,128,000. In the first half of the year 1886 the crisis continued to make itself felt, which did not begin to show any signs of improvement until the latter half of the year. The import and export of gold and silver in bars and coin show an excess of import of \$2,796,000, and an excess of export of \$19,500. The cause of this turn must be attributed chiefly to the group of provisions and foodstuff, of which the import shows a decline of \$16,898,000, and the export an increase of \$3,808,000. The import value of grain and other breadstuffs has declined from \$73,542,000 to \$51,170,000. This decline in the import of grain lies in the falling off in the consumption. The export of manufactured articles has in some respects considerably increased. For instance, the export of silk goods has risen from \$31,773,000 to \$38,913,000, woolen goods from \$37,842,000 to \$41,050,000, and hosiery from \$20,944,000 to \$24,752,000. The export of clothes, ready-made linen, and millinery goods amounted to \$20,658,000 in 1885, and \$23,216,900 in 1886; laces, embroideries and silk laces rose from \$9,146,340 to \$14,113,400, and hardware and jewelry from \$19,232,750 to \$21,950,740 for the same periods. The import of machinery, instruments and apparatus has decreased by \$2,284,000, and the export by \$654,500. Of cattle and other living animals the import has decreased by \$4,274,000, and the export by \$3,689,000. The export of sugar, syrups and molasses has risen from 623,903 tons to 635,321 tons. Raw fat and grease materials show a decrease of import to the extent of \$1,438,520, and of export to the extent of \$150,000. The import of manufactured goods has declined by \$2,246,720, and the export by \$435,540. The value of the imports of pottery, earthenware, porcelain and glassware exceeds the value of the exports.

These figures show a marked turn in favor of the trade of Germany for the year 1886, and the crisis of 1885, which threatened to continue in 1886, was thus overcome.

### Acquiring Land in Sumatra.

CONSUL ECKSTEIN.

APPLICATION has recently been made to me by parties in the United States for information as to the Dutch laws concerning the purchase of plantations in Sumatra by foreigners, and whether foreigners can acquire land in Sumatra, and under what conditions.

The *India Mercury*, a weekly journal devoted to colonial affairs, and published at Amsterdam, in its issue of last week contained an article discussing the subject of Americans apparently contemplating to enter the field (I might say "fields") of Dutch East India by procuring lands in Sumatra for purposes of tobacco cultivation.

Believing that this matter may be one of more or less importance to certain of our citizens, I concluded that furnishing some information on the subject might perhaps be appreciated.

With this end in view I solicited at and obtained from the Department of the Colonies at The Hague a written statement, of which the following is a correct translation, viz.:

Agreeably to your favor of the 25th inst. I herewith beg to furnish you with some

information concerning the granting of lands for agricultural enterprises in the island of Sumatra.

In all the regions (*gewesten*) of that island, which are under the direct administration of the Dutch Government, the Governor-General is empowered to grant, on the request of applicants, waste lands on an emphyteutic lease (*erfpacht*) for a term not exceeding seventy-five years, against an annual quit-rent (*canon*) of one guilder per 7,096 square metres.

The application must be accompanied by a certificate of measurement of the lands selected.

The lands granted on an emphyteutic lease are subject to a ground tax amounting to  $\frac{3}{4}$  per cent. of their estimated value.

No quit-rent or ground tax is levied in the year in which the grounds have been acquired and in the five ensuing years.

For every workingman employed on the establishment in the service of the tenant, by emphyteusis, a capitation tax (*hoofdged*) of  $\frac{1}{2}$  guilders a year is payable.

None but residents (*ingezetenen*) of the Netherlands, or of Netherlands India, and joint-stock companies, or limited-liability commercial corporations established in the Netherlands or in Netherlands India, are admitted as tenants by emphyteusis.

Ownership in landed property, with the privilege of making improvements thereon, can be acquired only for small parcels and when exclusively intended for the erection of industrial establishments or dwelling-houses.

In the provinces governed by indigenous or native princes under the sovereignty of the Netherlands (Siak, Serdang, Deli, Langkat, &c.), belonging to the residency of the east coast of Sumatra, lands for agricultural enterprises are granted by those princes.

The grants conferred by them, based on a temporary cession of the soil against payment of an annual rental or indemnity, are subject to the approval of the Indian Government.

The above information, while it is entirely authentic as far as it goes, may not be sufficiently detailed and comprehensive to serve the practical purposes of parties in the United States who may have the intention to become interested in the cultivation of tobacco in Sumatra.

If there are any such it would seem to me to be advisable, if not necessary, for them to apply for further and fuller particulars on the subject, through agents or representatives in the colonies, to the proper authorities there.

In conclusion I deem it interesting to be stated that the two principal companies in Holland engaged in the culture of tobacco in Sumatra, one having its head office at Amsterdam and named "Deli-Maatschappij," and the other at Rotterdam, named the "Tabak Maatschappij Arendsborg," have within the last two weeks declared dividends, arising from last year's sales of the crop of 1885, amounting, respectively, those of the former to 108  $\frac{1}{2}$  per cent., and those of the latter to 100 per cent.

### Emigration from Austria-Hungary.

CONSUL STERNER.

EMIGRATION from Hungary deserves to be classified as follows : Firstly, into what can be called general emigration by individuals from all classes of the people and from the greater part of the state; and, secondly, into a systematic movement *en masse* by one class of people only, and only from one district of the state. My attention has been principally confined to the latter class, and I wish it to be understood that the details given in this report refer more in particular to the same.

The great mass of these emigrants belong to the agricultural class, but also include some who have been employed in the timber industry and in mines; in quality they all represent what is called "raw labor" and of the "rawest sort" at that, since in their occupations they have thus far been very little accustomed to the use and the handling of machinery or improved tools.

"Hard times" are the main cause of the emigration from here as they are from other countries, with the difference, however, that here these "times" either did not exist as early as in other countries, or, if they did exist, they were not felt by these people, on account of their peculiar stage of culture.

Overpopulation is certainly not one of the causes of this emigration. To the contrary, Hungary, in its manifold resources, has the capacity of holding a much larger population than it has, especially when compared with other Continental states of less resources.

That, under such conditions, there should be any emigration at all is to be accounted for by the fact that since about 1873 the state has totally lost its dominating position as the granary of Europe; that the strong competition by other countries has caused its main industry, agriculture, to become far less profitable than it once was.

This changed state of affairs has brought the usual consequences,



first of all, reducing wages, and, further, compelling proprietary producers to resort to a more general introduction of labor-saving machinery, thereby actually creating a surplus of this branch of labor, while the development of other branches of industry has not been rapid enough to give employment to those who have thus been deprived of work. Much of this surplus is drawn to the cities, where there are efforts now being made to develop the industries, but a part of it is compelled to leave the country to obtain the means of living, and thus the movement to America has been brought about.

The last census of Hungary demonstrates this clearly, for while the cities show quite a gain in most cases, there are some of the rural districts which, instead of increasing, have hardly held their own in the past decade.

High taxation has, of course, much to do with causing emigration, but in this case more indirectly through its influence on the standard of wages and in causing an increase in the cost of living. The improved and increased means of transportation have also had their influence on the latter in advancing the prices of the main staples of life where they are produced, and which is thus most severely felt by the rural population, while the same means have actually made possible and introduced some items of expense and even extravagance which before the event of railways had never been dreamed of by these people in their simplicity of mind, habits and tastes.

### Mexican Railway and Tariff.

CONSUL ALLEN.

THE opportune moment for commercial exploitation of Mexico on the part of the American merchant and manufacturer is near at hand. This opinion is based upon the following facts: First, the extension of the Mexican International Railway, and, second, the revised tariff list, as enacted by the last Mexican Congress, and which goes into effect the first day of July next.

The International Railway, now drawing rapidly toward completion, commences at Piedras Negras, on the Rio Grande, will connect with the Mexican Central at Laredo, some 300 miles distant, and ultimately terminate at one of the Gulf or Pacific Coast ports of Mexico. It passes through a section of country in the past having but limited commercial relations with the outside world, and where the methods of transportation employed were circuitous, expensive and occupied much time. The general character of this country is favorable to the development of an extensive and lucrative commerce, containing as it does valleys rich and fertile, well populated, adapted to the cultivation of all cereals, and large tracts well wooded and watered. The celebrated Laguna district, one of the most productive valleys in Mexico, is tapped by this line. Its soil is peculiarly suited for the successful cultivation of cotton, being bountifully supplied with water by a natural system of seepage. Irrigation is unnecessary, and the absence of deteriorating influences, such as early and late frosts and heavy rains, enables the planter to harvest his entire crop absolutely free from stain or discoloration. In this district the Mexican cotton planter, with his primitive methods of cultivation still in use, receives an average yield of 400 pounds of lint (or gin) cotton to the acre, while the average yield of the United States does not exceed 250 pounds; the cost of production to the former is five and a half cents per pound, while that of the latter is from six to eight cents, and the Mexican planter is protected from competition by an import tax of six cents per pound on all foreign-grown cottons. Fruits of all varieties are found in this region, and the wine-grape is grown with marked success; a just approximation of its fertility and resources can only be reached by a comparison with the sterility of the frontier.

Under the operation of the revised import list duties are so largely reduced that many articles of American manufacture will be brought within the reach of the poorer classes, thus creating a demand which hitherto has not existed; especially will this be the case with canned goods and American prints; on the former the duty has been prohibitive, or nearly so; on the latter the reduction in duty is great. Thus the increasing and cheapening facilities for transportation, assisted by confidence and respect for our people, which is the outgrowth of a conviction rapidly becoming fixed in the Mexican mind that American citizenship is a guarantee that its possessor will be protected in every legal and just right, is breaking down all barriers to a full and complete establishment of trade relations on a sure and lasting basis. Spas-

modic efforts in this direction will accomplish no permanent good. The American merchant must realize that action, persistent and earnest, is necessary, and to my mind the most efficacious method to be adopted is that of sending active, earnest and intelligent representatives to the Mexican market. In the large area now opening up the American should take the initiative; for some time to come he would not be brought into sharp competition with the merchants of the Old World, whose unwearied vigilance has been rewarded by such rich harvests in the older and better settled portions of Mexico.

I cannot refrain from calling the attention of the department to the imperative necessity of an early determination of the question of the right of a state to levy an import tax on foreign merchandise coming within her jurisdiction. Such a tax now exists in this state (respectfully refer to my dispatch No. 20); when enacted, 5 per cent. was the amount levied, since reduced by gubernatorial action to 3 per cent., and the fear that new laws of a like nature may at any time be passed rests as an incubus on the development of trade.

### Emigration from Norway.

CONSUL GADR.

NO other country in proportion to its population has contributed so much to that of the United States as Norway. About sixty years ago, in 1825, a small craft left the port of Stavanger, in Western Norway, with the first emigrants for America. Some of these, belonging to the Society of Friends, had become dissatisfied with the restricted religious liberty in their native land. A portion of these Norwegian pioneers settled near Rochester, in the State of New York, while others made their way down to Texas. Ten years later other small bands of Norwegians settled in Illinois, Wisconsin and Minnesota. These three States afterward became, with Iowa, the principal homes of the many thousands of Norwegians who followed them. In 1840 the Norwegians settled in America still numbered only 1,200, but during the next decade the settlers, all of them belonging to the Lutheran faith, received ministers from the mother country and formed into parishes under the Norwegian Lutheran synod, when their number rose to over 12,000. About two-thirds of this number had settled in Wisconsin, where they bought land and prospered in agricultural pursuits. It is computed that in 1860 the Norwegians in America numbered about 60,000, in 1870 about 180,000, 115,000 of whom were born in Norway.

During the following period of five years, 1871 to 1875, the emigration statistics give a total of 43,435. Of these 33,161 persons were from the rural districts in Norway and 10,274 from the towns. The emigration seemed to threaten to deprive Norway of her most useful hands when it reached the alarming number of 18,070 in the year of 1869, but during the following years it fell again to an inconsiderable number. The period of 1876 to 1880 shows nearly the same total figure as the previous five years, viz., 40,244, but it was the last year, 1880, which alone sent the large number of 20,212 persons.

During the period 1881-5 Norwegian emigration reached its climax and attracted general attention, not unmixed with apprehension of its possible influence on the population of the country. In 1882, when 28,804 Norwegians left their country, the whole population was estimated at 1,900,000, which gave about 1.5 per cent. of its inhabitants as emigrants to America. Not only the population received no increase by births during that year, but it really decreased by 4,000 individuals. Since 1814, when the country passed through the ordeals of war and famine, the country has been always regularly increasing. The large emigration in 1880, 1881 and 1882 may be expected to exercise an unfavorable influence on the growth of the Norwegian population for years to come, as the increase by births was very small during those years.

It can already be seen that the emigration in the present year will show a marked increase on that in the two previous years. The cause of it must probably be found in the favorable reports of better times in America, while a great depression in many branches of trade and commerce continues to reign in this country.

In examining which classes supply the largest number of Norwegian emigrants, we find that farm hands and agriculturists occupy the first place. The wages are but small and quite insufficient in the rural districts for a man with a family to support, and the prospects a young man has to become the proprietor of a farm through his own labor are



so distant, if not quite unattainable, that he may well give them up altogether to join his numerous friends and relations in America. These friends, who in many cases own farms in their new homes and need more hands on them, write tempting descriptions of their prosperity in America and the ease with which a young man can improve his condition there, inclosing often prepaid tickets for the passage. The annual emigration statistics show that no less than about 50 per cent. of the emigrants are provided with tickets sent them from America. Traveling agents of the different transatlantic steamship lines carrying emigrants encourage the country population to leave their homes, and a fresh impetus has lately been given to emigration by the many Norwegian-Americans, who come to spend the winters with their friends in their native land.

As a necessary result of the continued exodus of young and strong farm hands there has been a serious lack of laborers in some of the country districts, and wages have risen in proportion. In many places this loss has been partially balanced by the introduction of modern labor-saving machines, but the proprietors, finding so many difficulties to struggle with, often follow the example of their laborers; for the Norwegian soil is not very productive, the summer is short and the climate severe. Farming has, consequently, never proved a remunerative pursuit in these latitudes, and Norway, with a population of less than 2,000,000, is annually obliged to import cereals for about \$9,000,000. The prospects of the farmers are just at present gloomier than usual, on account of the large supply of cheap grain from America and other producing countries and the general depression in the prices of all agricultural products. Land is, therefore, selling at a heavy loss, while its former owners set off for the Far West.

It is but justice to say that America has gained in the Norwegian contingent of its emigrants, as the race is on the whole distinguished for its intelligence, industry and the frugality of its habits. They are commonly accused of being slow and tenaciously attached to old habits, a natural consequence of their secluded life in solitary valleys of their native land. But from old times, when they first settled in Iceland and established other remote colonies, they have always proved useful and valuable settlers, ready to assimilate with the people in the land of their adoption.

Next to the agriculturists or *bönder*, as the peasantry are called in this country, we find artisans of all kinds strongly represented among the emigrants. The official statistics for 1882 report that 1,496 artisans left in that year for America, of whom 150 were blacksmiths, 341 joiners, 129 tailors, 230 shoemakers, 159 carpenters, 96 painters, 75 masons, 71 bakers and confectioners and 52 mechanics. In the same year 876 seafaring men emigrated, 167 fishermen and 275 persons who had been engaged as tradesmen, clerks, &c. It is not to be wondered at that Norwegian domestic servants go to America in increasing numbers, as their wages at home are very low, varying from \$20 to \$40 a year for girls in the towns, and in the country they are even lower; 896 servants are thus reported to have left in 1882. Norwegians employed as servants prove generally honest, good-tempered and trustworthy. They ought consequently to be especially welcomed in American homes. The principal, and I may say almost the sole, cause that Norwegians leave their homes is the desire to improve their material condition.

## CONSULAR NOTES.

### Agricultural Schools in Baden.

The purpose of these schools is to furnish young people who have not been able to obtain a common-school (*Volksschule*) education with a simple, systematic, practical and theoretic training in agriculture; to fit them out in the best manner possible for their future calling, and to do this at the least possible expense to the pupil. To accomplish this the course is so arranged that theory is being constantly demonstrated by practice. The result is that the scholar, even during the two years' course, in contact with teaching and experiment, masters the principles and returns to hillside and valley to put them in practice. The course embraces the simplest elements of natural science applicable to agriculture, special attention being given to those branches particularly fitted for the school district. Lessons are also given in practical mathematics, reading and writing. The work of the teachers is very much simplified and assisted by carefully and

accurately constructed charts, diagrams and models; by a good, well-selected library, and by visits and practical talks and demonstrations on the part of successful, well-known, well-skilled farmers.—*Consul Monaghan*.

### Petroleum Fuel in Russia.

At present there are not more than half a dozen small steamers in the Black Sea using petroleum fuel; they run between Russian Black Sea ports, and have been getting their residuum at Novorossisk at a cost of about \$5.75 per ton (it cost the sellers fully ten times that amount). A small sailing vessel fitted to carry residuum in bulk from Novorossisk to Odessa took one cargo to Odessa, which from the fact that this vessel is now loading here, and will be more than thirty days getting a cargo of 300 tons, at a cost of probably not less than \$12 per ton here (sales were made of small quantities at that price, but not for fuel, last month), it is fair to presume that the supply at Novorossisk is either exhausted or that the product was not satisfactory. Another significant fact is that the Russian Steamship Company, the most energetic, enterprising and best managed corporation of Russia, owning the greatest number of steamers in the Black Sea trade, has never seen fit to change from coal to petroleum fuel. These are indisputable facts, and the inference is, I believe, only reasonable that if it is dependent upon the supply from Russia, petroleum is indeed a "fuel of the very distant future."—*Consular-Agent Chambers*.

### South American Sheep.

I merely make the suggestion that in these respects, if we had ransacked our inventiveness to describe an animal which should be pre-eminent adapted to some portions of our own country, we could hardly have imagined a breed more suited than these South American sheep. I refer particularly to the desert portions of Texas and of New Mexico and Arizona, whose arid soil and general scarcity of water are a great drawback to their proper development. Introduced under favorable circumstances, any or all these classes of animals might be able to fill an industrial gap in those regions which otherwise we can scarcely expect to find a filling for; and thus even the most unpromising portions of those Territories might in time attain to a development, through the valuable wools which these animals afford, that there else can be but little hope for, while in other parts of the country, wherever ordinary sheep may be produced, the introduction and acclimatization of these valuable wool-producing animals would give us a new source of national wealth.—*Consul Baker*.

### Pastoral Industry of the Argentine Republic.

The wealth of the Argentine Republic consists in great part of its pastoral industry. There are in the country, according to the latest official estimate, 14,171,000 cows, 4,186,000 horses and 70,910,000 sheep, whose total value is put at \$331,000,000, and yet it will surprise the cattlemen of the United States to learn that this immense number of animals, year in and year out, are never fed a mouthful of food, but feed themselves, and live, as best they may, entirely on the natural grasses which grow spontaneously. During the frosts of winter and the droughts of summer it is the same. The *estanciero* makes no provision for either, and his animals, running ever at large over his broad leagues of land, must accept the pasturage, whether it be better or worse, which they afford. It is an exceptional year, however, when his animals cannot, after some sort, "pull through" from one season to another. What this pasturage signifies will be better understood when it is known that these natural grasses cover over 63,120 square leagues, against 645 square leagues devoted to crops and agriculture. That is to say, the area of the latter is yet less than 1 per cent. of the whole. It were worth a gallop over the pampa to the lover of nature to see the kinds and varieties of native grasses which can thus furnish food the year around to such immense numbers of animals, and which are the sole and only dependence of the *estanciero*.—*Consul Baker*.

VERY encouraging reports are given of the profits of sheep-raising in the pine woods of Alabama and Georgia. There is an extensive free range in these States, where no attempt has been made to cultivate the land, which is largely occupied by pitch-pine trees. It is said that the sheep kept there are never troubled by ticks, and have few diseases. The only enemies are dogs and wild cats.



## Foreign Notes.

### Argentine Republic.

Arning & Hutz write about wool from Buenos Ayres, June 15: Receipts to date 245,500 bales, 1,000 having been received during the fortnight, while the sales amounted to 500, leaving a stock on hand of 26,000 bales. The market was dull, hardly any further wool arriving. Last year there had arrived up to June 15, 261,000 bales, and the stock was 3,000 bales. Dry hides were occasionally dull after 35,000 had been taken for the United States on the basis of \$3.30 for classified 23-pound hides. Slaughtering of cattle was drawing to a close on all hands; there had so far been slaughtered during the season, Rio Grande included, 1,216,000 head, against 1,521,000. Horse-hair was lower; Southern mixed sold at \$5.80 to \$6.50, and Northern at \$5.20 to \$6; hair from the rivers at \$4.50 to \$5.20. Exchange on London, 47½d.; the gold premium had been fluctuating between 131 and 136, closing at 135.

### Borneo.

A new company has just been formed in London—the Central Borneo Company, Limited—with a share capital of £100,000, in order to work several grants obtained in the northern centre of the island from the Sultan of Brunei. The concessions emanating from the latter embrace the mining of gold, silver and other minerals, except coal and diamonds, with the exception of the Putaton and Pandaruan districts, where the new company has obtained the privilege of also exploiting the diamond fields. The latter are represented as stretching over an area of 1,000 miles square.

Another company has been started at Rotterdam, the Rotterdam Borneo Company, with a share capital of 500,000 guilders, toward which 100,000 guilders have been subscribed and paid for. The company's purpose is to go into tobacco planting on the territory of the North Borneo Company, Limited.

### Brazil.

At Bahia the sugar market had remained steady during the fortnight ended June 30, some 18,000 bags changing hands at 1,120 reis the arroba No. 7, equal to 5s. 5d. per cwt., cost and freight. Cocoa was declining, 1,100 bags selling down from 8,400 reis to 8,060, and being offered at the close at 8,000, 8,400 equaling 70s. 7d. per cwt., and 8,060, 65s. 8d. Of rosewood there was hardly any left in first hands. Redwood was weak at 600 reis per arroba, equal to £6 15s. 4d. per ton, cost and freight. Exchange, 22¾d.

### Burmah.

Bullock Brothers & Co., Rangoon, give particulars of the rice movement up to July 16 as under:

	Shipments To Europe.	To Other Countries.	Load'g for Europe.	For Other Countries.
	1887. 1886.	1887. 1886.	1887. 1886.	1887. 1886.
From Rangoon..tons.	294,000 286,360	153,100 18,000	18,000 5,000	1,000
Akyab .....	155,200 116,250	30,600 5,000	5,000 4,800	....
Bassein .....	112,400 145,010	200 2,000	2,000 4,800	....
Moulmain .....	37,600 43,130	10,000 2,000	2,000 4,800	....
Totals ..	599,200 590,750	194,200 25,000	4,800 1,000	....

### Cochin China.

Following is the report of Behre & Co., Saigon, about the rice situation: "There has been an uninterrupted decline, and at length a point has been reached at which shipments for European and Manila account may be resumed, which is all the more welcome as some 4,000,000 piculs of this year's crop have still to be sold, and as China is not likely to draw much rice from abroad in view of her own splendid crop. On previous contracts some 299,000 piculs have still been shipped to Hong Kong. The new tariff in Cochin China will not become operative at present, a cable dispatch from Paris announcing that the measure will have to be submitted to the State Council first, hence there may be a delay to the end of the year ere the new duties become operative. Meanwhile our import trade has been thrown into confusion. We quote No. 1 mill-cleaned rice, \$2.25 per picul. Shipments to date since January 1, 5,265,786 piculs of rice, against same time last year, 5,476,952. Cotton, clean, is bringing \$3.95 per picul; black pepper, \$20.50; hides, \$8.50 to \$9.75 buffalo, and \$15 to \$19 cow. Exchange, 4 months, London, 3s. 1½d."

### France.

The *Journal des Fabricants de Sucre* expresses itself, under date July 23, as under about the sugar situation on the Continent: Beet-root sugar has at times shown weakness, but the German speculators succeeded in keeping prices up to the level of last week until to-day, when they receded. A fair amount of business has meanwhile been done in ready sugar at steady rates. French crystals are still offered in fair quantities, but of Russian only small parcels are to be had, the larger sellers declining to accept the present parity. Some complaints are heard of excess of dryness in certain districts, but not at present sufficient to reduce the prospects of a fair crop on the whole; at the same time the character of the weather during the next few weeks must have an important influence on the ultimate yield. The roots are rather backward, but have made some progress last week and will take a fresh start now that more copious rains have set in since the 21st inst. No. 3 white is worth, in Paris, 33 frs., against 33.50 in 1886 and 47.25 in 1885. Visible supply in Europe and America, Cuba included, July 22: 1,068,558 tons, against 1,316,217 last year and 1,445,415 in 1885.

Vintage prospects are of the most encouraging kind. The vines

are everywhere in fine condition, the blossoming had been disturbed nowhere by untoward weather, the show of diminutive grapes betokened coming abundance, there was no mildew, the thunderstorms brought refreshing rains and no hail squalls, and everything seemed to favor the growing crop. As may be supposed, business in wines was pretty much at a standstill; stocks on hand being ample—of foreign at Bordeaux, Paris and Certe in particular—the general tendency was downward, dealers only buying from hand to mouth and the export demand being slack.

Both raw silk and silk goods were quiet but firm at Lyons. Cocoons of the new crop were everywhere selling higher; the European yield of raw silk, though satisfactory in point of quantity in the aggregate, was by no means as large as had been predicted, hence the weakness which characterized the European silk markets in May and June had made room for firmness. The silk-goods trade, being between seasons, was quiet, but prospects of a large use of silks were of the most encouraging kind.

### Germany.

The vintage on the banks of the Rhine, Nahe and Moselle promises well. It was backward in June, but the clear, warm weather in July made full amends, there being at the same time no complaints this year about hayworm and mildew, and it is confidentially expected that the yield will pretty much everywhere not only be ample, but the quality good, unless some untoward events should still interfere, such as destructive hail showers. There was so far but little dropping of diminutive grapes, if any. As may be supposed, the wine trade was meanwhile paralyzed, except so far as the supplying of immediate requirements was concerned.

Spirit distillers and rectifiers feel far from comfortable in view of the growing formidable Russian competition abroad under the export bounties which the Russian Government allows the distillers. Russia at present not only produces nearly as much spirit as Germany, but comes up to the latter in the export figure. The Carlsbaum Rectifying and Distilling Company, in Sweden, for example, takes off the hands of Russian distillers increased amounts of spirits, rectifies the same, and then competes with Hamburg and the rest of Germany in Spain and elsewhere, managing its business better and more carefully, besides, than is done nowadays by the Hamburg rectifiers, whose trade declines.

The iron and steel trades have commenced to slightly look up in Rhenish Westphalia, and in nearly every branch syndicates have been successfully formed to keep the output properly under control, and at the same time regulate prices through common selling bureaux at the capital. Even pig-iron was better. Billets, wire rods and spiegel, usually exported to the United States, were as yet in but slack demand for the latter. In Upper Silesia pig was dull, but finished iron continued in active request all the way to the close of the year. The Silesian branch establishments in Russian Poland were a great deal less molested than had been apprehended. The wire branch was still tolerably active in Upper Silesia.

### Greece.

Current crop advices from Patras bear the date of July 13. The weather throughout Greece has been propitious, so that the quantity promises to be something unexceptionable. In the upland districts the grapes, it is true, would have grown larger if it had been more rainy; as they are now approaching maturity, however, it will be better if the warm weather continues a little longer. It is estimated that Greece will turn out this year 10 per cent. more currants than in 1886, hence a yield of altogether 140,000 tons is expected. Shipments of new fruit it was believed would commence about the middle of August.

### Holland.

The *Nederlandsche Courant* in its monthly coffee review publishes a valuable table showing coffee consumption and prices in leading European countries in every year since 1859, in order to demonstrate that a higher ruling does not influence consumption by curtailing it to the extent generally assumed. With the exception of England, more particularly a tea-drinking country, consumption has everywhere increased during a quarter of a century. Thus in Germany from 1.80 kilograms per capita in 1860 to 2.60 in 1886; in France from 0.92 to 1.77; in Belgium from 3.24 to 4.15; in Switzerland from 3.09 to 3.30, and in Austria from 0.55 to 0.94, while in England it decreased from 0.60 to 0.40. In presenting its usual statistics the *Courant* remarks that at the high prices ruling consumption in Europe has, it will be seen, not decreased, whereas in the United States it has, and that the latter circumstance, when it became known, contributed to precipitate the breakdown in prices, which in Holland was from 58½ centimes the half kilog. to 50. Follow the statistics:

ARRIVALS DURING THE FIRST FIVE MONTHS.						
	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	195,150	169,010	208,160	187,100	251,340	108,430
America.....	96,873	101,499	95,638	84,198	81,808	80,346
Totals.....	292,023	268,509	303,798	271,388	333,148	278,776
DELIVERIES.						
	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	179,450	179,510	179,860	151,540	189,640	159,780
America.....	89,496	103,035	101,440	87,192	82,993	83,972
Totals.....	268,946	282,545	280,300	238,732	272,633	243,752
STOCKS JUNE 1.						
	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	126,250	157,950	174,700	187,650	179,000	151,450
America.....	28,602	32,153	32,045	36,465	22,968	21,955
Totals.....	154,852	190,103	206,745	224,115	201,968	173,405



To which add unsold in Netherland Trading Company's hands:

1887.....	...bags.	192,746
1886.....		291,100
1885.....		588,925

## AMERICAN MOVEMENT.

	1887.	1886.	1885.	1884.	1883.	1882.
Arrivals for first five months.....	96,873	101,499	95,638	84,198	81,808	80,346
Consumption, do.....	89,328	102,786	101,395	87,131	76,670	80,015
Re-exports, do.....	168	249	45	61	6,323	3,957
Deliveries, do.....	89,496	103,035	101,440	87,192	82,993	83,972

Stocks, June 1..... 28,602 32,153 32,045 36,465 22,968 21,955  
As the Southern States of the American Union, with their large cotton, Indian corn and hay crops, are expected to flourish in an exceptional manner this year, and as they are great consumers of Brazil coffee, it is believed that American coffee consumption will recover materially during the remainder of the current year.

## India.

The length of new railroad lines gone into operation in British India last year was 1,720 kilometres, increasing the entire system to 21,425 kilometres or 13,498 miles, against 12,376 miles on March 31, 1886. The increase of traffic is best shown by comparing the returns of the last two fiscal years:

	1885-6	1884-5.
Passengers forwarded.....	80,864,779	73,815,119
Gross earnings therefrom.....	£5,538,126	£5,079,754
Goods conveyed.....	18,925,385 tons.	16,633,007
Gross earnings therefrom.....	£11,915,375	£10,665,941
Total gross earnings.....	17,889,625	16,066,225
Expenses.....	8,863,294	8,156,157
Net earnings.....	9,126,331	7,910,068
Net percentage earned on capital invested.....	5%	5%

Much of the increase in the transportation of merchandise is due to the reduction in freight rates. The ton per mile compares in pence with European rates as under:

	Wheat.	Sugar.	Cotton.	Cotton Goods.	Coal.	Merchant Iron.
England.....	1.54	1.12	2.77	2.64	0.51	1.06
Germany.....	1.13	1.32	1.61	2.06	0.51	0.78
Belgium.....	0.70	1.00	1.74	2.22	0.37	0.50
Holland.....	0.96	0.96	1.61	1.61	0.48	0.69
India.....	0.85	0.85	1.53	1.28	0.54	0.85

Indigo crop prospects in Bengal were less encouraging in July than in June. Many planters were compelled to cut their plants before maturity in consequence of the high water. In Behar the plant runs uneven and yields poorly. In the Northwest Provinces the outlook is good. Up to middle of July the Indian indigo movement had been in London as shown below:

	Arrivals.	Deliveries.	Stock, July 15
1887.....	15,734	11,387	15,010
1886.....	17,931	9,309	18,207
1885.....	14,313	12,242	14,242
1884.....	22,288	13,178	19,028
1883.....	15,852	12,202	12,979

## Java.

Advices from Batavia, July 23, estimate officially the government coffee crop at only 412,740 piculs, against an actual outturn in 1886 of 816,939; in 1885 of 499,833; in 1884 of 1,011,787; in 1883 of 1,083,000, and in 1882 of 1,025,000 piculs. Following are the dates at which the government will sell at auction 25,000 piculs of coffee each sale: August 17, September 21, November 23 and December 21. Some forty private coffee plantations sold in June and July together over 50,000 piculs at 47.50 to 57.50 guilders per picul, several parcels thereof reselling at an advance. Furthermore, there were sold at an improvement lots of other Netherland East India coffees at Batavia, such as Samarang, Macassar, Padang, Lahart and Bali. The Padang Government sale of 18,000 piculs, which was held June 28, averaged 60.45 guilders per picul. The Macassar coffee crop is estimated at 20,000 piculs; Bonthain, 5,000 sundries and 25,000 Timor; together, 50,000 piculs; whereas the usual crop ranges between 125,000 and 135,000 piculs.

## South Africa.

Poppe, Schunhoff & Guttry report about grease wool from Port Elizabeth, June 25, that there has been a good demand for Karoo, which remain in ample supply. Bluish superior long staple was in less request for Bradford, but a good many lots nevertheless changed hands at 6d. to 6½d. Medium was inactive, yet firm. The stock of wool on hand consisted of 4,000 bales snow-white, 1,500 bales scoured, 200 bales fleece and 4,000 bales greasy, together 9,900 bales. Exchange, 90 days, on London, 1½ per cent. discount.

## Spain.

Following is the general view which the Saragossa *Viticultural Review* takes with reference to this year's vintage in Spain: "If we except a few localities in Aragon, Valencia, La Mancha and Navarre, where hail storms dealt out destruction, the vineyards, taken as a whole, look so promising that proprietors have every reason to feel hopeful and satisfied, inasmuch as more than an average crop is in prospect. If in some districts the show of grapes is not one of abundance, their quality is all the better. Meanwhile wine exportation, except in a few privileged places, is at a complete standstill, the French markets being glutted with wines, Paris and Bordeaux in particular, and there being no revival in the demand. The precarious position in which our viticulturists find themselves is in a great measure due to the fact that of late years so many new vineyards have gone into existence and that we have been suffering from overproduction. On examining the official export figures it will be seen that during the first six months we have ex-

ported more wines than last year. Last year at this time wines of inferior quality sold at double the prices the very salable wines of 1886 are now bringing. If with this growing production of ours we do not find other outlets besides France, it will therefore be difficult to prevent the total depreciation of Spanish wines, with another big crop in immediate prospect."

## Straits Settlements.

Following is the report of Gilfillan, Wood & Co., dated Singapore, June 15: Tin—During the fortnight floods up country have kept back supplies and the market continues bare of stock, but in sympathy with London the value has declined to \$38.50 per picul, at which there are now sellers. This month's shipments will be moderate. Black Pepper—About 400 tons of all sorts have been sold. Prices for Singapore have ranged between \$21 and \$21.40, closing with buyers at \$21.50. Some decline is expected shortly when supplies should be abundant. White Pepper—Very little has been coming to market and dealers hold their stocks for cost. For 5 per cent. stuff the value is still \$39.50 per picul. Sago flour—A good business has been done in all quarters, prices in some instances showing a slight decline. We quote: Sarawak, \$2.03; Brunei, \$1.95, and Singapore, \$1.92½@2.05. Pearl Sago—A large business is reported at \$2.40. Tapioca—Closes with a slightly firmer feeling at \$5.50 for good pearl and flake. Supplies are coming in steadily, but are not larger than we expected. Nutmegs—There has been a jump in prices, but no business owing to absence of supplies. Considerable contracts at low prices have yet to be filled. Nominal quotations are \$98 for 110's and \$110 for 80's. Mace—No stock. Cloves—No supplies have been offering for some weeks past. Gum Copal—There have been moderate arrivals added to the stock and buyers are holding off in the hope of a decline. Gum Damar—Sales of Palembang have been made at \$26.25 to \$26, poor color. Exchange, 38. 2½d.

## Uruguay.

Following is *El Comercio's* report about hides, dated Montevideo, June 22: The movement in dry hides has been restricted, 5,000 twenty-one pound hides being taken for the United States at \$6.10, and 3,500 kips at \$6.10 to \$6.15, leaving a stock on hand of 170,000 hides. Wool is neglected and lower; 600 bales selling at irregular prices, and 300 being shipped to Europe for account of holders, leaving 2,600 bales in stock. Horsehair is quiet, 35 bales selling at \$16.25 to \$17, and 2 bales cowtails at \$18.50 to \$19.50; 22 bales horsehair being consigned to Europe for owner's account, leaving a stock on hand of 63 bales. Saladero ox horns, \$90 to \$95 the 1,000. Exchange on London, 50½d.

## Victoria.

Renard Brothers Company, Melbourne, June 10, furnish particulars of Australian wool shipments up to June 1, as under:

	1887.	1886.	Increase,	1885.
From Victoria.....	327,931	309,366	18,565	328,200
South Australia.....	147,554	129,905	17,649	151,297
West Australia.....	16,373	14,343	2,030	13,222
Tasmania.....	18,621	16,281	2,340	17,268
New Zealand.....	259,573	231,386	28,187	218,163
Increase.....			63,771	
Decrease.....				
New South Wales.....	328,441	340,090	11,649	287,615
Queensland.....	63,081	70,801	7,720	70,260
Totals.....	1,161,574	1,112,172		1,086,115
Net increase.....				49,402

They add: The demand for wool is tolerably good, but receipts are so light that hardly anything transpires in the way of sales; however, telegraphic advices from the interior advise shipments this way, so that soon our market will resume its wonted animation. At Sydney quite a large trade is reported under a brisk inquiry. The little done at Adelaide has been at satisfactory rates; little is so far making its appearance at that point and the market remains steady.

## West Indies.

CUBA—Sugar reports from Havana of the date of July 31 state that at the beginning of the week under review the market was active and large sales were effected at advancing prices. Later on, owing to contradictory dispatches from Madrid regarding the suppression of export duties on sugar, molasses and rum, buyers held aloof, but when the news was cabled that said duties were actually abolished by decree a better feeling prevailed and the market closed quiet but steady. At the outports a scarcity of stock caused holders to demand high prices. The rains have been heavy. Owing to the expected abolition of the export duty shipments had been held back and would be all the larger in August. Centrifugals were selling at \$2.50 to \$2.87½; fair to good refining Muscovadoes, \$1.81½ to \$2; stock at Havana and Matanzas, 25,500 boxes, 567,000 bags and 4,500 hogsheads. As per decree July 18, the new administration will be composed of the following named officers: Captain-General, General Salamanca; Segundo Cabo, General Lopez Pinto; Secretary-General, Don Pedro Antonio Torres, and Civil Governor of Havana, Brigadier Lofio.

TRINIDAD.—E. P. Masson reports from Port of Spain, June 24, about sugar that the weather has been fine and wet alternately, thus proving very favorable to growing crops. There had been shipped to date 19,460 hogsheads, 8,347 tierces and 282,709 bags and barrels, of which to the United States, respectively, 18,249, 8,296 and 91,187, against, respectively, 15,400, 7,478 and 162,021 in 1886. Receipts of cocoa did not increase, and the price of ordinary remained firm at \$15.75 to \$16 the fanega. The export since January 1 had been only 6,550,420 pounds, against 9,846,550 in 1886 and 9,679,550 in 1885. Asphaltum—The market was steady at \$9 per ton boiled, and \$3 crude. Shipments summed up since the commencement of the year 16,412 tons, against 14,656 in 1886 and 12,808 in 1885, thus showing a steady increase. Exchange—Colonial bank bills, ninety days' sight on London, were selling at \$4.80.



# Review of the Markets.

## Reports for the Month Ended August 1.

**Butter.**—Fancy grades are firm and there are occasional sales of extra Western at advances on quotations. Inferior grades are in plentiful supply and are fairly steady. Imitation creamery is steady. We quote: Creamery, 16½¢@22¢; State dairy, new, 17¢@20¢; Western, 11¢@17½¢.

**Cheese.**—Receivers have dropped a fraction on prices. Fancy colored is taken up close; stock other than fancy has moved in a moderate way and accumulations are mostly in these grades. We quote: Factory, best white, 10¢@10½¢; do., best colored, 10¢@10½¢; do., good, 9½¢@9¾¢; night skims, medium, 6½¢@7¢; do., prime, 8¢@8½¢; Ohio factory, fine, 8½¢@8¾¢; do., fair, 7¢@7½¢.

**Coffee.**—The coffee market, so far as Rio grades are concerned, has been dull and featureless, while values have shown an easier tendency. Invoice values are entirely nominal, and are quoted on the basis of 20c. for No. 3, with 19½¢ bid. The monthly Rio coffee statement of William Scott's Sons is as follows:

Stock in warehouses July 1, 1887.....bags. 497,842  
Received since  
At New York.....bags. 107,318  
Baltimore.....14,286  
Total supply.....159,100

Delivered from warehouses since—  
At New York.....bags. 69,983  
Baltimore.....14,826  
New Orleans.....5,870  
Total supply.....90,599

Stock in warehouses August 1, 1887—  
At New York.....bags. 484,047  
Baltimore.....66,736  
New Orleans.....15,580  
Total stock.....566,363

Afloat and loading for United States to July 2.....33,329  
Purchased for United States to August 1 (21,000 bags Santos).....26,500

Total visible supply August 1, 1887.....bags. 626,192  
The market for all descriptions of mild coffees has ruled quiet and steady, the only fresh business reported being in East India descriptions, of which the sales comprise June Padang at 26½¢, March at 25½¢ and in Batavia at 72 florins. Dealers have shown very little disposition to replenish their stocks of West India growths in consequence of the meagre proportions of the jobbing trade, and no important sales have transpired. Good Cucuta invoices have been offered at 20c., but 19½¢ has been the best obtainable bid. We quote: Rio, ordinary cargoes, per pound, 18½¢; fair do., 19c.; good do., 19½¢; prime do., 19½¢. Santos, fair to good cargoes, 19¢@19½¢; Java, 22½¢@23½¢; Singapore, —¢; Ceylon, 22¢@23¢; Maracaibo, 20½¢@20¾¢; La Guayra, —¢; Jamaica, —¢; San Domingo, —¢; Porto Rico, —¢; Central America, 19¢@22½¢; Mexican, 19½¢@22½¢; Angostura, —¢; Savanilla, 19¢@21½¢; Mocha, 25¢@27¢.

**Cotton.**—"Spot" has ruled very quiet, but prices are unchanged, middling closing to 3-16¢@10-16¢. Options have been irregular, closing at a decline of 8 to 10 points. Final quotations were: August, 9.91¢@9.92¢; September, 9.28¢@9.29¢; October, 9.10¢@9.20¢; November, 9.15¢@9.16¢; December, 9.15¢@9.16¢; January, 9.18¢@9.19¢; February, 9.24¢@9.25¢; March, 9.30¢@9.32¢; April, 9.37¢; May, 9.43¢@9.44¢.

**Drugs and Chemicals.**—The market is generally dull and demands are mostly for moderate quantities. Quotations are: Bleaching powders, \$1.95 @2.16; caustic soda, \$2.37¢@2.40; soda ash, \$1.20¢@1.37½, and sal soda, \$1.20; acetic acid, 2½¢@2¾¢; oxalic acid, 8¢@8½¢; citric acid, 50¢@51¢; tartaric acid, 43¢@45¢; for crystals; acetate of lime, 1.80¢@1.85¢; for brown; aloes, 5½¢@6¢; Cape, alum, \$1.75¢@1.87½ for lump and \$1.87½¢@2 for ground; ammonia carbonate, 8c. for English; assafoetida, 9¢@10¢; arnica flowers, 7½¢@10¢; albumen, 15¢@16¢; for foreign blood; arsenic, 2½¢@3¢; balsam copaiva, 32¢@42¢; balsam tolu, 32¢@34¢; balsam Peru, \$1.15¢@1.20; bichromate of potash, 10½¢. for Scotch; borax, 5½¢@6½¢. for refined; blue vitriol, 4½¢@4¾¢; brimstone, \$18.75¢@19 for seconds; buchu leaves, 7¢@7½¢. for shorts and 24¢@25¢. for longs; cantharides, \$1.65 for Russian; camphor, refined, 22½¢; castor oil, 17¢@18c. in bbls. and cases; cardamoms, 6¢@8c. for Aleppy and 75¢@81¢ for Malabar cassia buds, 10¢@10½¢; camomile flowers, 6¢@25¢. for Roman and 15¢@28c. for new German; cutch, 6½¢@8c.; chlorate of potash, 15¢@15½¢. for crystals and 15¢@15½¢. for powdered; cochineal, 30c. for Teneriffe silver; cream tartar, 34¢@35¢. for crystals and 35¢@36c. for powdered; gambier, 5½¢; ginger, 16c. for Jamaica bleached and 10½¢@13c. for unbleached; glycerine, 22¢@24¢; Guarana, \$1.35¢@1.45; iodide of potash, \$2.70¢@2.83; licorice paste, 28¢@29c. for P. & S. and 30¢@32c. for Corigliano; manna, 46¢@47c. for small flake and 80¢@85c. for large flake; morphine, \$3.20¢@3.60 for domestic; opium, \$4.65¢@4.70 for new, duty paid; oil cloves, \$1.70¢@1.85; oil cassia, 65¢@66c.; oil anise, \$1.90¢@1.95; oil lemon, \$1.65¢@1.85, as to brand; oil sassafras, 33¢@36c.; oil wintergreen, \$2¢@2.05; oil bergamot, \$1.75¢@2.37½; oil peppermint, \$3.25¢@3.60 in tin and \$3.25¢@3.35 in glass; prussiate of potash, 18½¢@19c. for American yellow; quicksilver, 51¢@52c.; quinine, 40¢@44c. for German and 48¢@55c. for American; roots, 3½¢@4c. for gentian; Seneca root, 30c., and Colombo root, 7½¢@12c.; ginseng, \$1.80¢@2; sarsaparilla, 7¢@7½c. for Mexican; seeds, 6½¢@7c. for Trieste brown mustard and 4¢@4½¢. for California yellow; senna, 30¢@32c. for Alexandria; shellac, for D. C. 16¢@16½c. per lb.; V. S. O., 13c. per lb.; I in diamond, 13¢@13½c. per lb.; sticklac, —c. per lb.; sugar of lead, 5½¢@5¾c. for brown and 12c. for white; tonka beans, \$1.25¢@1.40 for Angostura.

**Dry Goods.**—Buyers are present in the dry-goods market in large force, and, as a rule, there has been a large demand for all grades. In cotton goods a large business has been completed, and stocks of staples have been reduced by a legitimate and healthy demand. Brown cottons, from standards to five yards, were never so clean regarding the stocks with agents, nor after such a good six months' trade was the

production so well covered by orders increasingly pressed for delivery. But for standards and four-yard goods the production has been under orders since last December. Bleached cottons are equally well situated when compared with any previous season. Many makes have been sold ahead for eight months or more. The wants of the jobbing and manufacturing trade have continued steady and long, while by all classes of distributors there is a good request for instant shipments, not possible of being met. Wide sheetings are as well conditioned as could be expected after the large business of the season, as stocks are nominal, many widths well sold ahead and the demand of steadiness for new and supplementary assortments. Gray and blue drills are sold ahead. White colored cottons are in fine shape, with the principal makes of ticking, denims, &c., well sold ahead. Stocks of duck are merely nominal, white corset jeans and satteens are in moderate and ill-assorted stock, with a demand of much steadiness. Printing cloths are in moderate demand, and the market is easy at 3-5-16c., less ½ per cent., for 64x64 cloths, and 3c. for 56x60 cloths. Prints and printed fabrics have been doing more moderately, as between goods forwarded and assortments to arrive a large business has been laid out, to which the many selections by distributors present have added a good quantity. The business so far, besides including large assortments of fancy calicoes for dress purposes, has taken like varieties of solids, staples, robes, furnitures, decorative and other specialties. Wide heavy prints in fancies and staples have done moderately well, but by markets of largest consumption the preference is for the narrow goods, though in time they may grow to appreciate the former. The recent inquiry has not been marked by any general activity, yet for some makes the request has been very good and many machines are well occupied with orders. Ginghams and woven wash goods continue in large favor, and while of the more popular makes the production has furnished large sales through deliveries on early engagements, new purchases of these and other qualities have added a good quota of business. Dress goods had a large share of attention, followed by fairly satisfactory results in the way of sales, which, with the forwardings on special orders, returned a large total of business. For autumn productions agents are well supplied with orders, and chief interest centred upon spring work. The general woolen market shows improvement, and heavy-weight clothing wools have been in more demand, although business has been restricted to some extent, because of absence of supplies. Flannels and blankets were in demand for moderate assortments, the former being proportionately less than the latter. As between auction purchases and orders in execution the general trade have fairly good assortments until the consuming demand is more defined in wants. Of blankets many moderate selections were made, while on orders in execution many deliveries were made. Shawls and skirts were looked after with some interest, but as a rule the transactions were of a sample character. Soft wool dress fabrics were in good delivery by some agents, but the demand was moderate. Doeskin jeans were in request for moderate wants, but through forwardings in the execution of orders a good business was reached. Underwear and knit goods were in improved request, and new purchases in connection with forwardings on old orders returned a good business.

**Freights.**—There has occurred no important change in the condition of berth freights, which remain pretty firm under free offerings of grain per steamer to the United Kingdom, which exerts a favorable influence all along the line. Grain charters attract but little attention, shipments by steam just now meeting with more favor. Oil charters are rather quiet, but rates are nominally the same, both for barrel and case oil. Vessels to load deals at the Provinces are in moderate request, but obtain former rates. The River Plate business continues comparatively fair, with \$11 obtained to Buenos Ayres from Montreal, and \$9.50 from Portland and Boston. West India vessels are inquired after to a limited extent, but in most cases owners' views are above those of shippers, which naturally restricts business. The coastwise lumber trade remains inactive, but former rates are still asked. Colliers of medium size meet with steady employment at association rates.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provisions.	Cheese.	Beef.	Pork.	Cotton.
Liverpool	2½	7.6	7.6	13.9¢@15	15¢@20	20¢@30	3.	2.	½¢@9-64
London	2½	9.	9.	10.	17.6	22.6¢@25	3.	2.	....
Glasgow	3 asked.	8.9	9.	10.	12.6¢@20.	30.	3.6	2.9	....
Bristol	3½*	10.	11.3	11.3	15¢@17.6	22.6	3.6	2.6	....
Leith	3½ asked.	12.6	12.6	13.9	17.6¢@20.	25.	4.	2.9	....
Hull	3½ asked.	12.6	12.6	12.6	20.	25.	4.	3.	....
Newcastle	4*	12.6	12.6	12.6	20.	25.	4.	3.	....
Antwerp	4½	12.6	15.	..	15¢@17.6	..	3.6	2.6	7-64¢@½
Hamburg	45	..	..	..	80 pf.	..	..	..	5-32d.
Bremen	60	..	..	..	1m.	..	..	..	11-64d.
Copenh'n	35.6d.	..	..	..	20.	..	..	..	....
Marseilles	35.6d.*	..	..	..	20.	..	..	..	....

\* Store.

Cork for orders, sail, 3¢@35.6d. Steam, 35. Direct port, United Kingdom, 3¢@6d. less.

### OIL QUOTATIONS.

	Refined Petroleum.	Naphtha.	Cases.
Cork and United Kingdom	2.0¢@2.9	2.3¢@3.	1¢@15
Direct port, United Kingdom	1.11½¢@2.6	2.1½¢@2.6	Adriatic..... 13¢@14
Direct Continent	2.0¢@2.6	2.1½¢@2.6	Mediterranean. 12¢@14
Baltic	2.6¢@..	2.7½¢@..	....

**Fruits.**—There is very little trading in foreign dried and changes in prices are trifling. We quote: Valencia raisins, 6¢@7½¢; loose muscatel, \$1.20¢@1.30; London layers, \$1.30¢@1.35; Sultana, 7½¢@8c.; Ondara layers, 7¢@7½c. Almonds—Princess, paper shelled, 20½¢; Sicily, shelled,—c.; Jordan, 40c.; Tarragona, 14¢@14½c.; Ivica, 14½c.; Langueoc, 14c.; French sardines, 9¢@11c. for quarter boxes and 15¢@17c. for half boxes. Citron, 16¢@16½c. Currants, 5½¢@6c. Figs, 8½¢@12c. Turkey prunes, 2½¢@3c.; French prunes, 6½¢@7c. Grenoble walnuts, 13c.; French, do., 7½¢@8c.; Naples do., 14½c. Sicily filberts, 7c.; Naples, do., —¢—c. Dates, 4½¢@



4½c. for Persian in boxes, and fards, 6@7½c. Brazil nuts, 5½@6c.; Chili walnuts, 7½@8c. In fresh fruit apples are plenty, but are mostly of inferior quality. In domestic dried there is some inquiry for Ohio quarters apples, sun-dried, at 4½c., with 5c. asked for some lots. New evaporated blackberries have been sold at 9½c. We quote: Apples—Fancy evaporated, —@—c.; do., fair to good, 13@15c.; do., State sliced, 5@6c.; do., do., quarters, 4½@5½c.; do., Ohio and Michigan quarters, bbls., 4½@5c.; do., old, 2@3½c. Cherries, pitted, 13@16c.; raspberries, evaporated, 20@21c.; do., sun-dried, —@—c.; blackberries, prime, —c.; whortleberries, —c.; plums, —@—c.

**Flour and Meal.**—The market for State, Western and city flour is easy. There is a moderate inquiry for export. We quote: No grade, \$1.00@2.10; fine, \$2.20@3; supers, \$2.65@3.25; extras, No. 2, \$3.20@3.65; extras, No. 1, \$3.85@4.50; clear bakers', \$3.90@4.10; straight bakers', \$4.15@4.50; patents, \$4.30@4.75; city extras (European), in 140-lb. sacks, \$3.50@3.80; city West Indies, \$4.45; city patent, \$4.30@4.75. Southern flour is steady and in fair demand. We quote: Fine, \$2.60@4; supers, \$3.15@3.25; extras, \$3.25@4; Richmond first, \$5@5.12½; Richmond second, \$4.52½; patents, \$4.75@5. Rye flour is quiet but unchanged. We quote: Fine, \$2.20@2.25; superfine, \$2.75@3c. Corn meal is steady on fair demands. We quote: Western kiln dried, \$2.60@2.80; do. white, \$2.85@3.60; Brandywine, \$2.70@2.75; Western bags, 90c.@\$1.25.

**Grain.**—Wheat options have been somewhat irregular, but prices are not materially changed, although closing a little lower. Closing figures were: August, 79½c.; September, 81½c.; October, 82½c.; November, 83½c.; December, 84½c.; May, 91c. Cash wheat has been fairly active at steady prices, but closing firm. The sales have been at 80½@81½c. for No. 2 red winter, afloat; 79½c. for No. 2 Chicago; 86½c. for No. 1 hard; 75@82½c. for ungraded red; 76½c. for No. 3; 79½@79¾c. for No. 2 in elevator; 78½c. for No. 2 Northwest. Corn options have been fairly active at steady prices. Closing figures were: August, 45½c.; September, 46¾c.; October, 48c.; November, 48½c. Cash corn has been in moderate request, yet the market has ruled strong. The sales have been at 45½c. for No. 2 mixed, afloat, 45¾c. in elevator, 45@46c. for ungraded, 45½c. for No. 2 in store. Oat options have been in light demand and prices have weakened, closing figures being: August, 31c.; September, 31c., and October, 31½c. Cash oats have ruled easy under moderate demands. Sales have been at 30c. for No. 1 white, 30@36½c. for No. 2 do., 35c. for No. 3 do., 34c. for No. 1 mixed, 35½@36c. for No. 2, 32c. for No. 3, 31c. for rejected, 34c. for No. 2 Chicago, 34@36c. for mixed on track, and 38@41½c. for white on track.

**Leather.**—An increased inquiry has been experienced for most grades, with Prime Heavy acid and choice non-acid scarce and mostly wanted at full prices. Union Tanned remains quiet and steady. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 19@20c.; middle do., 20½@21c.; heavy do., 20½@21c.; light seconds, 18@—c.; middle do., 19@—c.; 19@—c.; damaged, all weights, 16@16½c.; common hide, light, first selection, 18@—c.; middle do., 20@—c.; heavy do., 20@—c.; light seconds, 16½@17c.; middle do., 17@18c.; heavy do., 17½@18c.; damaged, all weights, 15@16c.; rejects, 11@12c.; acid hide of all kinds, light, first selection, 17@17½c.; middle do., 19½@22c.; heavy do., 20@24c.; light seconds, 16@16½c.; middle do., 17@18½c.; heavy do., 18@20½c.; damaged, all weights, 15@15½c. *Union Tanned*—Slaughter light backs, 29@30c.; middle backs, 28@30c.; middle backs, heavy, 28½@30c.; second backs, 26@27c.; light crop, —@27c.; middle crop, 25@27c.; crop seconds, 24@25c.; bellies, 13@14c. *Calcutta Buffalo*—Light, 15@16c.; middle, 15@16c.; damaged, 13@14c.; poor damaged, 10@12c.

**Lumber.**—As dealers are not in the market to any great extent now, wholesale offerings are being managed with care to avoid making concessions. Spruce is coming in less freely, but does not recover fully from recent decline on short and narrow stuff. The offerings of Lath have been somewhat restricted, and the market is firmer at \$2.15@2.25 per M. Quotations are: Spruce, random cargo, \$14.50@17.50 per M. feet; do., special cargo, \$17.50@18. White pine, South American shippers, per M. feet, \$28@30; do., West India shippers, \$17@19; do., box boards, \$15@18. Yellow pine, random cargo, \$19@21; do., special cargo, \$20@22; do., green flooring boards, \$18@19; do., dry flooring boards, \$21@23; do., siding, \$21@24; do., cargoes, f. o. b. Atlantic ports, rough, \$13@15; do., cargoes, f. o. b. Atlantic ports, dressed, \$18@20; do., cargoes, f. o. b. Gulf ports, rough, \$12@14; do., cargoes, f. o. b. Gulf ports, dressed, \$19@21.

**Metals.**—Pig Iron—Foundry iron meets with fair sale in about the quantities that have figured in late transactions. The deliveries meanwhile continue to be on a large scale, and supplies are kept in position, enabling sellers to maintain firm prices. No. 1 X is quoted at \$21@21.50, and No. 2 X at \$19@20, according to the brand and delivery. Gray forge is in relatively better supply than the foundry grades, and is merely steady at \$17.50@18.50, as to brand. Scotch pig has undergone no change whatever. The sales are fair and former prices rule throughout. We quote: \$20.50 for Eglinton, \$20.75@21 for Dalmellington, \$21@21.25 for Glen-garnock, \$21.50 for Gartsherrie, \$22@22.25 for Summerlee, \$22.25@22.50 for Shotts and \$22.75@23 for Coltness. Bessemer pig has been quiet. Sellers want \$19.75@20, and bids are few, with the majority about 50c. under the prices named. Spiegeleisen meets with only moderate demand. Prices are barely steady at \$27 for 20 per cent. and \$32 for 30 per cent. Steel Rails—Negotiations are pending on both domestic and foreign, the whole representing a considerable amount of rails. Aside from small lots, aggregating about 8,000 tons, no new business, however, comes to notice. Prices stand at \$38@39 at Eastern works and \$40@40.50 for tidewater delivery. Old Rails—No business of importance comes to notice and the demand has been tame. Holders remain firm, however, at \$24 for tees and \$24.50 for double-heads. Scrap Iron—Wrought scrap virtually neglected. About \$22 is quoted for No. 1 from yard and \$20@21 for ship lots. Copper—Lake ingot for prompt delivery remains at 10½c., with very little business and the demand moderate. There is still more or less speculative interest in futures, however, with sufficient support to hold values firm. Sales are reported at 10½c. for September delivery. Lead—Consumers are still very indifferent buyers of pig lead. The speculative interest seems still to have

good control of supplies for prompt and near future delivery, however, and they hold prices at 4.65c. About 150 tons said to have been sold at that. Several hundred tons were rumored placed at 4.60@4.55c. for distant delivery. Tin—Apparently the "bulls" and "bears" in that market are on their metal, pending developments, local operators are going slow. The situation of supplies here, consequent upon the absorption of nearly all stock arriving, leaves little to work on beyond the developments abroad. There have been small sales of August Straits at 23.15@23½c. Actual tin is said to be selling in outside markets cheaper than it can be bought here by local parties. Spot prices at the close were: Straits, 23½c. cash for five to ten ton lots, and 23.70@23¾c. cash, 23.80@23.85c. 30 days, for ordinary store parcels. English L. & F. about 23½c. cash, 23½c. 30 days, and Banca, 24@24½c. nominal. Tin Plate—There has been no material change. Transactions have averaged light, but stocks continue small and prices are held firmly. Spot lots quoted as follows: Charcoal, ½ cross assortment, Melyn grade \$5.15@5.20, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$4.65@4.70, each additional X add \$1; charcoal terne, M. F. grade, 14x20, \$6.25@6.30; M. F. grade, 20x28, \$12.53½@12.75; Worcester, 14x20, \$4.70@4.75; Worcester, 20x28, \$9.75; Dean grade, 14x20, \$4.27½@4.30; Dean grade, 20x28, \$8.90@9.12½; Allaway grade, 14x20, \$4.20@4.25; Allaway grade, 20x28, \$8.70@8.75; I. C. coke—B. V. grade, \$4.35; J. B. grade, 14x20, \$4.40@4.45; I. C. Bessemer steel, squares, \$4.55 basis; I. C. Siemens steel, squares, \$4.65 basis.

**Molasses.**—Boiling grades have ruled quiet and steady, Crab Island, 51½ test, selling at 21c. flat. Cuba boiling is nominally quoted at 18½c. for 50 test. Grocery grades have been in moderate trade demand at steady prices. New Orleans straight goods are in light supply and are held steadily, but the demand is chiefly for mixtures. There is nothing much doing in sugar-house. Sellers are asking 11½c. for extra heavy and 10c. for ordinary in bbls. There is a moderate demand for straight sugar syrups and exporters have been buying quite freely. Common to fine is quoted 19@20c. We quote: Cuba, boiling, 18½c.; Porto Rico, 25@38c.; Barbadoes, 23@28c.; New Orleans, common to fair, 30@35c.; do., fair to good, 36@40c.; do., prime to choice, 40@50c.; do., fancy, 52@53c.

**Naval Stores.**—Spirits turpentine has been more active and sales have been made at 31@31½c., closing at the outside price, with 32c. asked. Rosins are quiet and without important change. Common is rather scarce and is firm. We quote: Common, \$1.00½; good strained, \$1.05@1.10; E, \$1.20; F, \$1.30; G, \$1.40; H, \$1.50; I, \$1.60; K, \$1.70; M, \$1.80; N, \$1.85@1.90; W G, \$2.25, and W W, \$2.55½@2.62½. Tar is quiet and quoted at \$2 per bbl. Pitch is quiet and steady at \$1.35 f. o. b.

**Paper.**—At a meeting of the Manila Division of the American Paper Manufacturers' Association an advance of ¼c. on prices ruling July 1 was declared. The market is strong, being supported both by the demand and the strong position of the jute market, in which prices are advancing. Wall-paper has declined, owing to the break in the stainer's "pool," and prices are being cut very materially. The demand for all grades is very brisk, and manufacturers have their production well sold ahead, as a rule. Prices are steady. We quote: Fine flat caps, 13@15c.; superfine, 16@17c.; record and ledger, 18@22c.; supersized and calendered book, 7@8½c.; do. do., extra machine finish, 7@7½c.; do. do., low grade, 6½@7½c.; news, No. 1, 5c.; do., rag and wood, 4½@5c.; do., straw, 5½@5½c.; manillas, No. 1, light weight, 7½@8c.; do., heavy weight, 6½@7c.; No. 2 manillas, 5@6c.; bogus do., 2½@3c.; straw wrapping, heavy weight, 1½@2c.; do. do., light weight, 2½@2½c.

**Petroleum.**—Certificates are depressed and closed at 55½@55¾c. The demand for refined barreled oil is moderate, but the market is firm at 6½c. for 70° Abel test. Case oil was steady at 8½c. for plain brands, but sales were light and inquiries fewer than for two or three days past. Crude in barrels is quoted at 5½c. for Bradford and 6½c. for Parker. Naphtha quoted at 7½c. for prime city. Home trade lots barreled oil quoted at 7c. for 110° test standard white; 7½c. for 120° test do.; 7½c. for 130° test do.; 8½c. for State test do., and 8½@8¾c. for 150° test water white.

EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO JULY 31.

	1887.	1886.
From Boston.....	2,753,500	3,115,505
Philadelphia.....	87,382,147	84,507,253
Baltimore.....	5,372,540	9,812,325
Perth Amboy.....	9,278,499	2,166,920
Totals.....	104,786,695	99,602,003
From New York.....	208,745,803	224,773,297
Total exports from United States.....	313,532,498	324,375,300

**Provisions.**—Lard—While there has been a slight gain in prices, the market is not essentially strong. The demand is very light. Western steam has sold at 6.90c. for export. City is in moderate demand, and there have been sales at 6.60c. August, 6.80c., closing at 6.90c.; September, 7c., closing at 7@7.01c.; October, 7.05@7.06c., closing at those figures; November, 6.85@6.86c.; December, 6.84@6.86c., closing at same. Refined Lard was slow. Wilcox's quotation were 7.10@7.55c. for Continent and South American. Pork is not considered outside of job lots, and this business is very moderate. Prices are unchanged. Chicago ran from \$11.75 to \$11.90 for January. We quote: Old mess, \$15.75@15.75; new do., \$16.25@16.75; family, mess, \$15.25@17. Beef is hard to sell, with prices easy. Extra India mess, \$11@13 for best brands, and small sales only reported. Packet, \$8 in bbls; plate, \$7.50; extra mess, \$7.50@8. Hams are slow and weak in price; quoted at \$18.50@19 for spot and forward delivery in Chicago, and here at about \$19.50@20. Bacon was doing somewhat better, on freer speculation. The range on short ribs at Chicago was 8.07½c. for August, 8.07½@8.15c. for September and 7.90c. for October.

**Stearine.**—The market is quiet and steady. Oleomargarine has been selling at 6½c. We quote: Western and city stearine at 8@8½c., and oleomargarine at 6@6½c.

**Starch.**—Some small lots of Western corn are moving, but there is rarely an



inquiry for round lots. The market is steady at  $2\frac{1}{4}\%$  c. for bbls. and  $2\frac{1}{2}\%$  c. for boxes. Potato is steady at  $3\frac{1}{2}\%$  c. and is in moderate demand.

**Sugar.**—The sugar market is favored with a moderate amount of business, and with buyers showing more interest toward the close supplies were held firmly. Transactions have been on the basis of 4-9-16c. for 89 test Muscovados and 5-5-16c. for 96 test centrifugals, at which the market closed steady. The refined market is fairly active and firm, with the supply closely sold up. We quote, less drawbacks, for export: Cut loaf,  $\$3.95$ ; cubes,  $\$3.56$ ; crushed,  $\$3.92$ ; powdered,  $\$1.55$  @  $3\frac{1}{2}\%$ ; granulated,  $\$3.18$ .

**Tea.**—The market continues unsettled and somewhat demoralized by the constant pressure to sell through the auction-room and sales having resulted in lower prices. The business at private sale has been of small proportions and confined to some choice parcels of Formosa and Japan, which have been thoroughly well sustained in value and promise to be scarce as the season advances. The auction sales established lower prices, invoices of new superior cargo Formosa averaging 25c. regular, while good medium Japan sold at  $15\frac{1}{2}$  @  $16\frac{1}{2}$  c. and old tea of the same grade at from  $11\frac{1}{2}$  @  $12\frac{1}{2}$  c.

**Tobacco.**—Of Kentucky sales have been made mostly for export, within annexed range. The West continues to forward strong advices, and holders here are indifferent sellers unless at full quotations. We quote: Common lugs,  $4\frac{1}{2}$  @  $5\frac{1}{2}\%$  c.; good,  $5\frac{1}{2}$  @  $6\frac{1}{2}\%$  c.; low leaf,  $6\frac{1}{2}$  @  $8\frac{1}{2}\%$  c.; good,  $9\frac{1}{2}$  @  $11\frac{1}{2}\%$  c., and fine,  $10\frac{1}{2}$  @  $15\frac{1}{2}\%$  c. Virginia is in good supply, but there is a very limited demand at present. Prices without change. We quote prices as follows:  $4\frac{1}{2}$  @  $6\frac{1}{2}\%$  c. for common to good lugs,  $7\frac{1}{2}$  @  $9\frac{1}{2}\%$  c. for common to medium leaf,  $10\frac{1}{2}$  @  $12\frac{1}{2}\%$  c. for medium to good dark do. and  $11\frac{1}{2}$  @

$12\frac{1}{2}\%$  c. for good to fine dark do.; common to medium bright wrappers,  $18\frac{1}{2}$  @  $22\frac{1}{2}\%$  c.; fair to good,  $23\frac{1}{2}$  @  $30\frac{1}{2}\%$  c.; fine do.,  $30\frac{1}{2}$  @  $40\frac{1}{2}\%$  c.; common smokers,  $6\frac{1}{2}$  @  $10\frac{1}{2}\%$  c.; good do.,  $12\frac{1}{2}$  @  $15\frac{1}{2}\%$  c.; fine cutters,  $22\frac{1}{2}$  @  $27\frac{1}{2}\%$  c. Seed is reported dull, but steady. Sales: 1884-5, Dutch, at  $10\frac{1}{2}$  @  $14\frac{1}{2}\%$  c.; 1886, New England, p. t., and 1885 Pennsylvania Havana,  $10\frac{1}{2}$  @  $21\frac{1}{2}\%$  c. Foreign continues in moderate request at unchanged prices. Sales: Havana at  $60\frac{1}{2}$  @  $\$1.05$  and Sumatra at  $\$1.35$  @  $1.55$ .

#### STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuegos.	Yara.
Stock July 1, 1887.....bales.	45,950	.....	.....	47	110
Received since.....	7,874	.....	.....	39	410
Totals.....bales.	53,824	.....	.....	86	1,516
Delivered since.....	8,440	.....	.....	70	180
Stock July 1, 1887.....bales.	45,384	.....	.....	16	1,336

**Wool.**—The market rules quiet and weak, although holders in most cases refuse to accept of prices much below those current for some weeks. But buyers maintain that they can make better bargains for all descriptions, and some of the private transactions are said to be at lower prices than quoted for some time. The sales comprise spring Texas at 23c.; scoured California, 55c.; Montevideo, 30c.; California, 19c.; year's growth, Texas, 25c.;  $\frac{1}{4}$  blood, unwashed, 30c.;  $\frac{1}{4}$  washed, 40c.; fine Territory, 21 @  $22\frac{1}{2}$  c.; XX Ohio, 33c.; also scoured Texas grease, domestic noils, camel's-hair noils, East India, braid, washed fleece, unwashed fleece, spring California, lambs' super pulled, fine combing do., extra do., fine super do., No. 2 do. and unwashed fleece, at private terms.

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of Baltimore, for the Month Ended July 31, 1887.

Apples, bbls.....	300	Cotton, bs.....	45	Hair, bs.....	133	Petroleum, Refined, gals.....	1,455,158	Shuttle Blocks, crates.....	17	Tobacco, Manufactured, hhds.....	5,323
Bark, bags.....	4,525	Cotton-Seed Oil, gals.....	8,000	Hardwood, ft.....	18,000	Poplar, cub. ft.....	787	Shingles.....	40,000	Tobacco, tcs.....	604
Bark, Extract, bbls.....	2,305	Cracklings.....	93,384	Hickory, pcs.....	222	Poplar, pcs.....	1,392	Shooks and Heads.....	317	Tobacco, hhds.....	2,738
Bacon, lbs.....	52,505	Dried Apples, bbls.....	100	Horse.....	1	Poplar, logs.....	79	S. I. Cotton, bs.....	109	Tobacco, Smoking, lbs.....	100
Beef, bbls.....	86	Elm, ft.....	6,000	Hog Guts, lbs.....	26,680	Pork, bbls.....	13	Spokes, cs.....	18	Walnut, logs.....	618
Beans, bush.....	2	Fish Oil, gals.....	50,488	Kerosene, gals.....	30	Pork, lbs.....	245,806	Spare Ribs, lbs.....	6,000	Walnut, pcs.....	1,882
Beef, lbs.....	28,200	Fish, bbls.....	27	Lard, lbs.....	527,607	Quercitron Bark, bags.....	288	Starch, bbls.....	50	Walnut, squares.....	10,000
Books, cs.....	5	Flavine, bxs.....	20	Leather, cs.....	8	Rosin, bbls.....	6,158	Starch, bxs.....	24,000	Wheat, bush.....	1,734,215
Boiled Oil, gals.....	5	Flour, bbls.....	10,484	Leather, pcs.....	62	Salted Beef, lbs.....	3,000	Sugar, bbls.....	2	Whitewood, logs.....	24
Bristles, bxs.....	15	Flour, lbs. (in sacks).....	16,972,101	Lumber, pcs.....	2,795	Sausage Casings, tcs.....	4	Sundries, pkgs.....	10	White Oak, cub. ft.....	392
Bread, bbls.....	4	Fur Skins, bs.....	2	Lumber, ft.....	79,517	Sawed Walnut, ft.....	16,000	Tallow, lbs.....	2,730,346	White Oak Lumber, pcs.....	7,152
Butter, lbs.....	156	Furniture, cs.....	2	Meal, bbls.....	13	Sad Irons, cs.....	41	Tin Disks, bbls.....	18	White Oak Lumber, feet.....	100,000
Canned Meats, bxs.....	560	G. C. Coal, tons.....	4,475	Oats, bush.....	40	Salt, sks.....	2	Tobacco Leaf, cs.....	199	White Oak Lumber, cub. ft.....	13,780
Canned Goods, cs.....	779	Glassware, bbls.....	61	Oatmeal, sacks.....	869	Sewing Machines, boxes.....	229	Tobacco Leaf, hhds.....	241	White Oak Plank, feet.....	255,599
Cattle, head.....	1,822	Glassware, cs.....	14	Oak Plank, cub. ft.....	5	Shuttle Blocks, cs.....	227	Tobacco, Manufactured, lbs.....	56,682		
Canned Beef, cs.....	3,847	Grain Mills.....	16	Oak Plank, pcs.....	178						
Coffee, bag.....	1	Grits, bbls.....	43	Oak Lumber, pcs.....	3,630						
Coffee, bbl.....	1	Hams, lbs.....	29,528	Oil-Cake, sacks.....	10,560						
Corn, bush.....	256,792			Oil, gals.....	230						
				Organs.....	5						

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of Philadelphia, for the Month Ended July 31, 1887.

Bacon, qtrs.....	2,000	Carbon, bbls.....	40	Florida Water, bxs.....	300	Naphtha, gals.....	709,494	Planks and Logs.....	44	Staves, hhds.....	27,895
Bacon, pkgs.....	1,200	Chalk, bbls.....	2	Glue, bbls.....	2	Oil, bbls.....	20	Pork, bbls.....	37	Staves, bbls.....	27,721
Bark, Extract, bbls.....	25	Coal, hhds.....	700	Hardware, cs.....	11	Oil-Meal, bags.....	150	Provisions, pkgs.....	1,200	Staves, pipe.....	53,993
Bark, tcs.....	150	Coal, tons.....	4,165	Heads, prs.....	2,000	Oil-Gas, bbls.....	40	Residium.....	106,122	Syrup, bbls.....	250
Beef, Dressed, qtrs.....	1,000	Corn, bush.....	13,600	Household Goods, cs.....	25	Oil-Cake, bags.....	4,400	Rope, Manila, coils.....	75	Syrup, pkgs.....	450
Beef, bbls.....	50	Corn, bags.....	230	Hoops, bbls.....	1,200	Oil, Lubricat'g, bbls.....	1,050	Shooks, Sugar.....	6,880	Tallow, cks.....	300
Beef, half bbls.....	89	Comp. Ref. bags.....	60	Iron Safe.....	1	Par. Scale, bbls.....	1,050	Skins, Fur, bs.....	7	Tallow, hhds.....	383
Boneblack, bbls.....	10	Dir. and Stones, tons.....	160	Lard, cs.....	100	Petroleum, Refined, gals.....	9,115,858	Snuff, cs.....	100	Tobacco, hhds.....	650
Butter, cs.....	130	Emery Wheels, box.....	1	Lard, tcs.....	2,454	Petroleum, Crude, gals.....	1,272,022	Shingle Ballast, tons.....	150	Wax, bbls.....	50
Bunks, bbls.....	19	Filler, bbls.....	1	Leather, cs.....	5	Peas, bags.....	43	Slabs, bxs.....	8	Wagon.....	1
Canned Goods, box.....	1	Flour, bags.....	41,050	Meat, cs.....	50	Perfumery, bxs.....	200	Staves, cks.....	10	Walnuts, logs.....	90
Canals, Iron, bxs.....	4	Flour, sacks.....	1,000	Mohair, bs.....	142					Wheat, bush.....	980,324
Candy, cs.....	30			Nails, kegs.....	52					Yarn, pkgs.....	5

### Detailed Statement of Exports of Manufactured Articles and Produce, from the Port of San Francisco, Cal., for the Month Ended July 31, 1887.

Acids, pkgs.....	49	Bran, sks.....	1,715	Cordage, coils.....	31	Iron Pipe, pcs.....	826	Onions, cs.....	714	Scrap Tin, lbs.....	1,042
Agricultural Implements, pkgs.....	60	Bricks.....	56,931	Corn, cts.....	2,691	Kerosene, cs.....	1,720	Ore Chrome, lbs.....	909,000	Seeds, cs.....	1
Ale, pkgs.....	32	Broom Corn, lbs.....	54,061	Codfish, lbs.....	53,000	Ketchup, cs.....	52	Paints, pkgs.....	26	Seaweed, bbls.....	25
Arms and Ammunition, pkgs.....	60	Broom Handles, bbls.....	1,382	Doors.....	1,874	Kips, bbls.....	6	Paint, cs.....	258	Shingles, bbls.....	353,101
Arms and Ammunition, cs.....	25	Bread, lbs.....	81,497	Dope, cs.....	250	Lard, lbs.....	9,900	Peas, sks.....	20	Shells, Pearl, bbls.....	310
Bags, bs.....	171	Brandy, pkgs.....	82	Drugs, cs.....	255	Lead, kegs.....	100	Personal Effects, pkgs.....	31	Sheeting, yds.....	150
Barley, cts.....	8,091	Brandy, gals.....	2,482	Dried Fruit, lbs.....	62,089	Lead, lbs.....	617,401	Pearl Barley, cs.....	200	Shakes, bbls.....	300
Bark, bags.....	30	Building Material, pkgs.....	48	Empty Cans, cs.....	715	Leather, rolls.....	32,202	Plaster, bbls.....	230	Ship Chandlery, pkgs.....	43
Beans, lbs.....	85,670	Canned Goods, cs.....	3,812	Fertilizer, lbs.....	4,500	Leather Scraps, bags.....	142	Posts.....	3,000	Shooks, bbls.....	2,166
Beans, bush.....	2,079	Casings, bxs.....	100	Flour, bbls.....	24,213	Liquors, pkgs.....	108	Potatoes, cs.....	2,675	Shrimps, bbls.....	318
Benzine, gals.....	750	Casings, kegs.....	406	Fish, pkgs.....	113	Live Stock.....	83	Powder, cs.....	40	Shrimps, pkgs.....	9
Beer, pkgs.....	820	Candles, cs.....	176	Fruit, pkgs.....	128	Lime, bbls.....	10	Powder, kegs.....	43	Shrimp Shells, bbls.....	812
Beer, cs.....	128	Candles, bxs.....	497	Fruit, cs.....	2,107	Liquors, cs.....	112	Provisions, pkgs.....	2,262	Skins, bbls.....	3
Blasting Materials, pkgs.....	12	Canned fruit, cs.....	305	Furniture, pkgs.....	50	Lumber, feet.....	602,183	Quicksilver, flasks.....	303	Soda, lbs.....	73,440
Bluestone, lbs.....	99,370	Car wheels.....	12	Fungus, lbs.....	16,000	Lumber, Redwood, feet.....	98,186	Rags, bs.....	681	Soap, bxs.....	1,086
Blue, cs.....	50	Cassia, lbs.....	8,333	Germes, cs.....	60	Matches, cs.....	100	Raisins, bxs.....	143	Soap, cs.....	823
Blacking, cs.....	35	Cement, bbls.....	120	Ginseng, lbs.....	6,245	Matches, tins.....	1,000	Raisins, pkgs.....	210	Sugar, lbs.....	500,104
Boiler Composition, gals.....	1,500	Chinese Merchandise, pkgs.....	458	Glassware, pkgs.....	555	Machinery, pkgs.....	921	Raisins, cs.....	130	Sugar, pkgs.....	141
Borax, lbs.....	1,011,086	Cigars, cs.....	189	Groceries, pkgs.....	2,268	Malt, lbs.....	254,686	Rice, lbs.....	600,691	Syrup, bbls.....	110
Boots and Shoes, cs.....	188	Cigars, cs.....	881,000	Grease, bbls.....	50	Merchandise, pkgs.....	2,321	Redwood Lumber, feet.....	6,007	Tallow, lbs.....	43,668
Bone Black, lbs.....	119,340	Cigars, cs.....	544,000	Hay, bs.....	1,124	Mustard Seed, lbs.....	98,243	Sand, tons.....	50	Tea, lbs.....	30,077
Bone Meal, cs.....	209,020	Coke, lbs.....	1,000	Hides.....	4,543	Nails, kegs.....	383	Salmon, cs.....	3,953	Tin Plate, lbs.....	216,547
Boiler Composition, cs.....	494	Copper, lbs.....	1,000	Hiles, bs.....	19,062	Oats, cts.....	1,659	Salmon, bbls.....	395	Tobacco, lbs.....	25,353
Boiler Composition, bbls.....	90	Coal, lbs.....	26,140	Honey, cs.....	33	Oil-Cake Meal, lbs.....	24,292	Salmon, half-bbls.....	42	Vinegar, gals.....	48
		Copper Cement, lbs.....	43,243	Honey, lbs.....	1,700	Oil, gals.....	10,587	Salmon, kits.....	8	Wagon Matl., pkgs.....	163
		Coffee, lbs.....	171,386	Hops, lbs.....	6,318	Oil, Whale, gals.....	18,011	Salmon, pkgs.....	1	Wheat, cts.....	667,388
				Household Goods, pkgs.....	34	Oil, Coconut, lbs.....	22,242	Salt, tons.....	221	Wine, gals.....	106,354
						Onions, pkgs.....	34	Salt, lbs.....	43,600	Wine, cs.....	933
										Wire Reels.....	493
										Wool, lbs.....	1,359,921



## General Notes.

AN American firm in Yokohama is contemplating the establishment of a big company for the manufacture of leather at Jinsen, in Corea. Corean skins will be used, and after tanning will be shipped to Japan for sale.

A PHOTOGRAPHER at Pesth has succeeded in taking photographs of projectiles fired from a Werendler gun, while having a velocity of 1,300 feet per second. The projectiles appeared on the impressions enveloped in a layer of air hyperbolic in form.

A PITTSBURG concern is manufacturing copper-plated sheet steel, which indicates a new use for that metal. The sheet is made of decarbonized steel. After being rolled to the proper thickness it is electro-plated with copper on both sides and tinned on one side, and in this condition it is said to be a better article for many purposes than solid sheet copper.

A SOLUTION of manganese acetate, even if slightly acidified with acetic acid, gives an abundant precipitate if treated in the cold with sulphureted hydrogen. There is formed the well-known rose-colored sulphide, which, if heated to 100° in a closed vessel, is transformed into the compact green variety. On prolonged standing crystals are produced, even at common temperatures, and prove to be alabandine.

GOLD will only melt at a comparatively high temperature, but if 2 per cent. of silica be added to the gold it can be melted over the flame of a common candle. A pretty alloy, said to resemble gold exactly, can be made with sixteen parts copper, one of zinc and seven of platinum. The copper and platinum are covered first with borax and then with powdered charcoal and melted, then the zinc added, and the alloy thus produced is exceedingly malleable and can be drawn into the finest wire, while it never tarnishes.

A REPORT on the mineral resources of the United States during the calendar year 1886 will soon be issued by the Geological Survey. It shows that increased production and also increase in value were the general characteristics of the mineral industries during the year. The total value of the mineral products increased in round numbers from \$428,000,000 in 1885 to \$465,000,000 in 1886. The important factor in this gain of \$37,000,000 was the increased production of pig-iron from 4,044,525 long tons in 1885 to 5,683,329 long tons in 1886, and an appreciation of seventy-five cents, the average value per ton making a total gain of \$30,483,360 in this industry alone.

THE Russian Government has ordered an important experiment to be made. One of the four heavy ironclads being constructed in the Black Sea is to be provided with furnaces for burning liquid fuel. The vessel selected is the *Tchetine*, which carries sixteen inches of armor and six twelve-inch guns. The semi-official *Cronstadt Viestnik*, in noting the intended experiment, explains that the object is "to render the Black Sea fleet totally independent of English coal." This is an object the Russian Government has been doing its best to attain by other means as well—to wit, the new duty on foreign coal, and, therefore, no failure of the experiment will be of particular service to the coal trade. On the other hand, if the trial results in a success the whole of the men-of-war of the Black Sea fleet will for the future burn petroleum.

SLATE is not confined to its use as a roofing material by any means, but, on the contrary, is probably more universally used than any other stone. In composition and texture it is admirably adapted to the reception of carved and molded designs, is susceptible of a high polish, and possesses great power of resistance to the principal destructive elements, besides having the additional merit of wide range of color, embracing black, dark blue, purple, purple-clouded green, gray-clouded green, light green, and a clear, bright red. The scope of consumption is rapidly expanding, and among the uses to which slate is applied the following may be enumerated: Flagging, flooring, floor tiles, molding for tiles, vestibule trimmings, slabs, &c., wainscoting, mantels, hearthstones, steps, risers, platforms, sills and lintels, turned balusters, laundry and bath tubs, sinks and wash trays, meat and water tanks, refrigerator and cooling-room shelves, cistern linings, brewers' vats, mangers, butchers' and curriers' tables, bar fixtures, billiard-table beds, urinals, school slates and black-boards, counter-tops, vault work, grave linings and covers, and memorial tablets. Of the

above, no record of production or value can be obtained that would prove at all useful as a basis for estimates. Possibly, a faint idea of the proportions devoted to these various uses might be obtained from the production of the Slatington, Pa., section, where, besides an output of 108,000 squares of roofing slate, there were also made (in 1885) in round numbers, 39,900 cases of school slates, 31,850 pieces, or 1,430 cases, or 27 car-loads of flagging, 5,900 cases of black-boards, 30 cases of mantels and hearths, and 47 car-loads of shaved slate.

PROF. ELISHA GRAY is said to be perfecting his telautograph, and soon expects to be able to send autographic messages between cities. The chief feature is the plate on which the writing is done. No particular kind of pen or pencil has to be used; in fact, a sharp-pointed instrument of any kind, or even a piece of wood, will answer the purpose. The paper on which the writing is done and the autograph reproduced does not have to be prepared, for in the first instance it is the pressure on the plate which gives the impulse to the machine, while the reproduction is brought about by a tracing point, which may be a properly inked pen or even an ordinary lead pencil attached to a movable arm in the receiving machine at the other end of the line. At his Highland Park laboratory Professor Gray has made a number of very satisfactory trials of this invention, and he is inclined to think the machine will be demanded in all cases where absolute accuracy in the delivery and filling of an order is required, and that it will eventually supersede the present system of telegraphic communication; in fact, that an operator will simply transcribe a message, and, while in the act of so doing, will wire it to any point on the continent, the reproduction at the other point always being a facsimile of the writing of the person at the machine.

REFERRING to the statement that some tin plates were made recently at Hubbard, Ohio, the *Troy Times* calls attention to the fact that this is not the first time that plates have been successfully turned out by American manufacturers. At Wellsville, Ohio, the *Times* says, in 1873 the manufacture was begun, and another plant was made at Leechburg, Pa. In 1875 a similar enterprise was begun at Demmler, Pa. The latter establishment was closed in 1878 because of its inability to compete with English tin plates. When the manufacture began in the United States tin plates were selling at \$12 to \$14.75 per box. In 1878, when the American manufacture was discontinued, prices had dropped from \$5.18 to \$6.25 per box. This was, it is claimed, owing to a combination of foreign manufacturers to reduce the price. Importations have fluctuated somewhat. In 1873 the importations amounted to 192,487,440 pounds; in 1874 they had fallen to 160,318,912 pounds. Low prices from this on stimulated importations, and they rose to 198,310,632 pounds in 1876, and in 1884 they were 507,894,756 pounds. In 1886 they amounted to 572,252,699 pounds.

THE tests of the various appliances on the Lehigh Valley locomotive H. S. Goodwin to ascertain speed, weight of train, pressures, &c., continue. One of the best tests was made by the engine drawing 132 loaded coal cars from Pattenburg to Perth Amboy, and returning to Easton with 125 empty cars. Considering that the driving-wheels of the engine are five feet six inches high, this is a good pull. On a recent trial the number of revolutions of the wheels was ascertained to be 289 per mile. The cylinders on the engine are 19¼ inches. The recent tests showed that the engine worked better and freer with twelve or thirteen passenger cars than with five or six. Professor Kline, who has charge of the tests, now proposes to give the engine higher valves and 18-inch cylinders. Other changes are to be made so as to increase the speed of the engine to eighty miles per hour. This, it is claimed, can be done without much difficulty. At that rate of speed the Goodwin will be expected to haul five and probably six cars.

THE largest revolving black soda-ash furnace in the world has been recently erected by the Widnes Alkali Company in England, and is 30 feet in length, with a diameter of 12 feet 6 inches. The inside length is 28 feet 6 inches, with a diameter of 11 feet 4 inches. The furnace is lined with 16,000 fire-bricks and 120 fire-clay breakers, each weighing 1½ cwt. The weight of salt cake per charge, *i. e.*, contained in each charge of salt cake, limestone, mud and slack, is 8 tons 12 cwt. For 100 tons of salt cake charged there are also used about 110 tons of lime mud and limestone, and 55 tons of mixing coal slack. The total amount of salt cake decomposed is about 400 tons, which may be calculated to yield 240 tons of 60 per cent. caustic



soda. There is claimed for this massive furnace an economy in iron plate, in expenses on the engine power and on fuel consumed, as well as on wear and tear.

NATURAL gas has been found in large volume in Cincinnati at a depth of 290 feet. It is somewhat extraordinary, the experts say, that so large a volume should have been found at the moderate depth that has been drilled. The geological formation in which the gas is found is the Trenton limestone, which underlies the greatest portion of Western Ohio, and is nearest the surface along the Ohio River. In the northwestern portion of the State it sinks to over 2,000 feet below, and the cost of tapping the formation is correspondingly greater. If the flow of gas should be permanent it will be a great boon to the city, as its fuel supplies have heretofore been chiefly drawn from Pennsylvania and West Virginia, and every season when the river gets low there is always more or less apprehension of a coal famine.

THE Berlin *Handels Zeitung* remarks: It is pleasing to hear that the demand of the people of China for railways is making daily new converts among the Celestials, and has so far resulted in a memorial being submitted to the empress by the emperor's father, Prince Ching, Viceroy Li and the Marquis Tseng. This memorial advocates strongly the immediate laying of railways from Kaiping to Takoa and Tientsin. According to the latest news the empress has sanctioned this railway, and contracts for 125,000 tons rails and 60,000 tons iron for bridge building are to be placed immediately. The railway will be managed by the Kaiping Railway Company. Consultations are taking place anent further lines, and also concerning the question how the Chinese mines are to be brought into direct communication with Peking and the littoral. The *Zeitung* expresses the conviction that now, since a beginning is made, orders for railway material will probably be placed in quick succession.

MUCH interest has been recently attached to the conditions surrounding the tobacco crop, in the apparent curtailment of production, not only from the drought which has menaced the crop in a large breadth of area, but also in the indicated reduction of area planted, due to the discouragements of recent years from excessive production and low prices, and also to unfavorable weather at the planting season. Dealers in leaf tobacco have taken advantage of this situation, and have readily been able to work up a "boom" in values of the old stock, which has mostly left the hands of the growers. In the July report of the Department of Agriculture there was an indicated reduction of 17½ per cent. in the acreage this season, compared with last year, Virginia being reported at 75; Kentucky, 78; North Carolina, 80; Connecticut, Ohio and Illinois, 85; Missouri and West Virginia, 90; Indiana, 92; Tennessee, Wisconsin and Massachusetts, 95; Arkansas and Pennsylvania, 98; Maryland and New York, 99. The estimates of area were undoubtedly based partly on expected planting, which to more or less extent was interfered with by the unfavorably dry weather, so that later reports of the department may be expected to show a smaller area than originally indicated. In the meantime men in the trade have promulgated estimates, cutting the area down to about half that of last year. Inasmuch as these exhibits have emanated from parties interested, there is some margin for inference that they are not wholly impartial. That a large reduction has occurred is evident, and that much of the crop has had serious drawbacks from the unfavorableness of the season is also quite true.

### Catalogues and Price-Lists.

TO READERS.

THE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of THE MAIL in which they are noted.

BAKEWELL & MULLINS, Salem, Ohio, U. S. A.—A new catalogue and price-list of 200 pages, containing illustrations of architectural ornaments, &c., worked in zinc, brass or copper. The list is very extended and includes figures and allegorical groups as well as the purely architectural designs, and to these are added vases, finials, letters, &c. A telegraphic code is included in the book and will facilitate ordering.

AMERICAN WELL WORKS, Aurora, Ill., U. S. A.—An illustrated and descriptive catalogue, containing 224 pages, of well-sinking machinery and hydraulic apparatus. This is quite appropriately termed an "Encyclopedia."

KELLY, MAUS & CO., Chicago, Ill., U. S. A.—A volume of 776 pages, replete with illustrations and having a handy index of a large line of miscellaneous and heavy hardware, carriage hardware and trimmings, blacksmiths' and machinists' supplies, &c. This is a combination of catalogue and price-list and is valuable as a reference-book.

WALWORTH MANUFACTURING COMPANY, Boston, Mass., U. S. A.—An illustrated catalogue of 148 pages, relating to wrought and cast iron pipe, radiators, steam and gas pipe fittings, valves, cocks, hot-water and steam-heating apparatus, steam and gas fitters' tools and supplies.

SHEBOYGAN MANUFACTURING COMPANY, Sheboygan, Wis., U. S. A.—Catalogue comprising 306 pages, illustrating chairs in carved, sawn and bent wood. A very full and complete list.

YERKES & PLUMB, Philadelphia, Pa., U. S. A.—Illustrated and supplementary catalogues with price-lists, comprising 300 pages, of hammers, sledges, mauls, hatchets, picks, axes, wedges, &c. A very complete list.

JAMES SMART MANUFACTURING COMPANY, Brockville, Ontario, Canada.—224 pages of illustrations and descriptions of miscellaneous hardware, comprising a variety too great for present enumeration. A supplementary catalogue of 60 pages accompanies this.

## Business Notices.

THE "Lightning" hay-press, manufactured by the Kansas City Hay-Press Company, Kansas City, Mo., U. S. A., is a powerful machine, well constructed. This press is well adapted to farmers' use, as it is rapidly and easily worked and performs its duty satisfactorily.

THE Dominion Starch Works, Walkerville, Ont., Canada, manufacture several varieties of starches which have won the most flattering testimonials for their qualities and working character. Parties seeking a good starch for laundry purposes are specially invited to test the products of this concern.

FOREIGN buyers are requested to send to L. B. Swartwout, Three Rivers, Mich., U. S. A., for illustrated descriptions of saw-mill machinery manufactured by him. Mr. Swartwout makes a specialty of gang edgers, lath machines, lumber trimmers, water-wheels, &c. Price-lists will be sent on application.

THE "Nickel-Plate" organ is a cheap, yet effective instrument for which the manufacturer, the Farrand & Votey Organ Company, Detroit, Mich., U. S. A., invites consideration. This house manufactures all styles of organs and will send a complete catalogue of its instruments to parties addressing the house as above.

OVER three hundred different machines for working up wood are manufactured by J. A. Fay & Co., Cincinnati, Ohio, U. S. A. These are for use in all kinds of shops where wood-working machinery can be made available. The firm invites correspondence, and will forward circulars and estimates to parties applying therefor.

THE Garry Iron Roofing Company, Cleveland, Ohio, U. S. A., is making a superior line of iron roofing. It is also the manufacturer of the Wood's corn sheller, a cheap, simple and effective machine. Persons interested in goods of these kinds will receive prompt attention to their inquiries by addressing as above mentioned.

THE American Well Works, Aurora, Ill., U. S. A., manufacture all kinds of well-sinking appliances, and will send to parties interested its large and profusely illustrated catalogue, which contains full and complete particulars of outfits for sinking wells. This firm also manufactures pumping machinery, besides a number of other specialties which will command attention.

THE harvesting machinery made by the Massey Manufacturing Company, Toronto, Ont., Canada, is of a high standard, which has gained for it reputation and purchasers. Several illustrations of the machines made by this company have appeared in THE MAIL. Farmers and dealers in agricultural machinery are invited to send for descriptive catalogue of the well-known products of the Massey Manufacturing Company.

F. A. ROBBINS, San Francisco, Cal., U. S. A., makes a specialty of the production of canners' and soap-makers' presses and dies, and also manufactures a general line of metal punching and shearing machinery. Mr. Robbins was for many years connected in this line of business in the Eastern States, but for the past twelve years has devoted his time and manufacturing resources to the Pacific Coast. Foreign buyers needing machinery of the class mentioned are invited to take advantage of Mr. Robbins' experience and to confer with him as to their wants.



# AMERICAN MAIL

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## The American Tram-Car.

THE AMERICAN IDEA—THE FIRST STREET TRAM-CAR—DEVELOPMENT OF THE TRAMWAY—EXTENSION OF THE AMERICAN SYSTEM—CONSTRUCTION OF TRAM-CARS—IMPROVEMENTS—CABLE ROADS—ELECTRIC TRAMWAY SYSTEMS.

THE horse railway, or tramway as it is known in other countries, is essentially an American idea in its adaptation to the wants of the general public for the transportation of people from one locality to another. This adaptation, of course, involved the construction of the American horse or tram car.

So accustomed have people become to seeing the ordinary tram-car passing up and down their thoroughfares that it will appear something like a revelation to be told that it is a thing of gradual development and practically the outcome of the thought and business energy of one man, John Stephenson, who like his great namesake of the steam-engine, has devoted a long life to the study and advancement of the street-car systems of this country.

As long ago as 1831 the manufacture of street-railway cars was begun in New York on the present site of the Grand Central Hotel on Broadway. In those days street tramways were unknown, and the usual means of transportation was by the cumbrous and ungainly omnibus. In 1832 the business was removed to Bleecker street, about which time, the Harlem Railroad having commenced operations, the first street cars were built for its use. In 1837 the establishment was removed to Harlem, and so continued until 1843, when the present commodious quarters on Twenty-seventh-street, and of which a cut is given, were first occupied. The premises contain eleven city lots, besides which there are large yards on the eastern side of the city for the storage of lumber used in the factory. The buildings of the manufactory are of brick, constructed in the most substantial manner. They are six stories in height, and under the roof in the several departments the entire process of the manufacture of cars is carried on. The machinery is of the very latest and best approved character for the purposes intended, with a capacity to turn out five cars per day, which in construction and finish have no superior.

A large number of skilled and practical men are employed in the several branches of this manufacture. Many of these—mechanics and artists—have for years been in the service of the firm, and are experts in their several lines.

The present generation will be astonished at the illustration of the original tram-car as it was conceived and built in 1831. It is in effect a mammoth omnibus, consisting of three coaches united in one. The entrance to each was separate and by a door at either side, and was capable of holding thirty passengers. The patience and easy-going good nature of our ancestors who intrusted themselves to its slow and tortoise-like movements will be equally a matter of wonder to the modern

business man. John Mason, the founder of the Chemical Bank of this city, was the first president of the road, and it took seven years and \$1,100,000 to construct the road from Prince street on the Bowery to the Harlem River, a distance of seven miles, a feat which could now be accomplished in sixty days, as was lately demonstrated in the laying of the Broadway tracks.

From that year if there be any one thing more than another which tells of enterprise and inventive genius it is the steady growth and development of American street-car systems, until there is scarcely a foreign country which is not beholden to the United States for their means of street locomotion. In 1853 charters were obtained for the Second, Third, Sixth and Eighth avenue lines in New York city, but it was not until after the war and the impetus given to enterprise by the resumption of business that the roads were financially successful, and

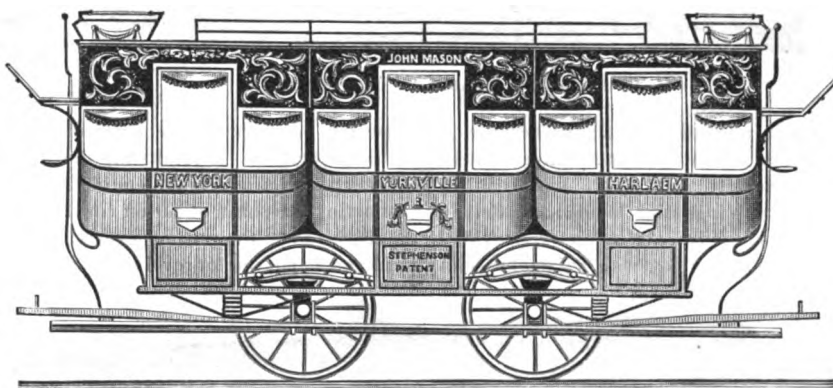
the demand for the system spread to Canada, lines being established at Montreal, Quebec, Toronto, Hamilton, Ottawa, St. John's and Halifax.

In 1860 George Francis Train made an effort to introduce street tramways into England, but mismanagement and the popular prejudice existing at that time against anything American caused it to result in failure, and it was not for some years afterward that the antagonism

was overcome and the system admitted, and to-day there is scarcely a city of any importance in England in which the tram-car is not to be found.

The protective policy of France succeeded for a number of years in keeping out the tram system, but about ten years ago Calais, the nearest point to England, admitted the one-horse, conductorless car, and from that time the street railways have been gradually adopted throughout the Continent. Berlin, Bremen, Hamburg, Brussels, Vienna, Amsterdam, Stockholm, Christiania, St. Petersburg, the Cape of Good Hope, Java, Australia, Bombay, Mexico, the West Indies and South America are some of the points to which America ships its cars; and where extraordinary difficulties exist as to means of transportation the iron work and fittings are made here and the wood work and general design is supplied in the shape of drawings and plans, together with detailed information as regards the most approved methods of finish and construction.

The American and European systems differ considerably, the latter still clinging to the system of grooved rails, seats on the roof and other features which belonged to the earliest cars constructed in this country. The American system has a freedom of wheel-flange, superior lightness, strength, elegance and durability at a minimum of cost. The best materials are impressed into the service of the builder, such as the lightest, strongest and most durable timber, combined with long experience in the most approved methods of cutting and preparation in seasoning and protection from decay. The machinery, such as wheels, axles, boxes, pedestals, springs, bearings or brasses, are the result of the developments of experiments extending over many years. As an instance of this the usual length of service to be



ORIGINAL TRAM-CAR. (Built in 1831.)



obtained from the "bearings" of an axle journal at one time rarely exceeded four months, but those now made run from four to six years, and the cars, as a whole, exceed the average of those of European manufacture by from twenty to twenty-five years, and there are many cars to be seen in New York city to-day which have been running under hard and constant service for over fifteen years.

Then, too, the lightness and easy running of the cars is much sought both as to comfort to the passengers and as being a source of great economy to the companies in the matter of horse-flesh. The ease and quiet are the result of the improved running-gear, in which the super-spring system insulates the body of the car, together with the passengers, from the shock and noise of the running-gear and the break-work. In the matter of ventilation and light the former has been improved by the perforated ceiling in addition to the usual ventilator windows, while increased glass has been introduced by the adoption of metal sash-frames, the stiles of which are filled with india-rubber, thus securing almost perfect immunity from rattle and noise. The passenger telephone provides a means of communication between passengers and the conductor wherever he may be, and the sense of comfort is enhanced by the neatness in the decorations of the interior, which consist of a native wood finish, combined with bronze mountings, trimmings and handles. Safety—the great desideratum on roads whose grades are steep—is provided for by the use of a powerful central lever brake, with adjustable han-

since been made to revive them, and the opening of the elevated railroads has probably set the question entirely at rest.

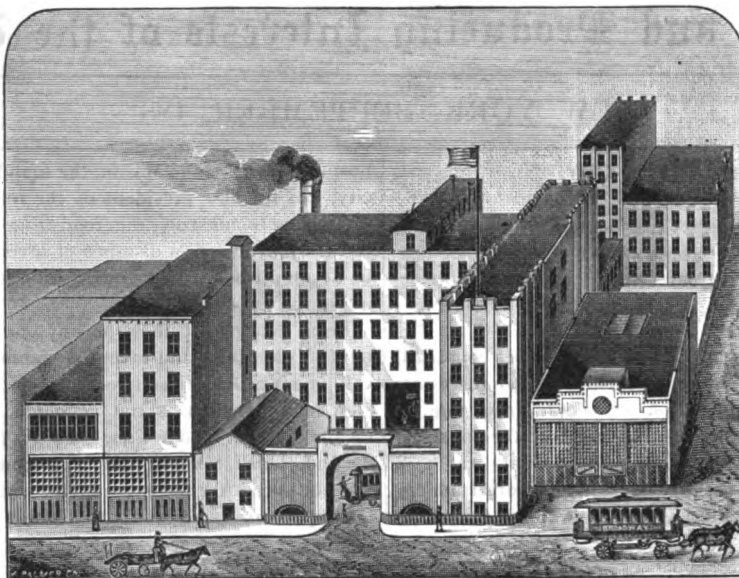
The substitution of mechanical motive-power for the horse in the operation of street cars has brought about the construction of cable roads in Cincinnati, St. Louis, Chicago, San Francisco and on a cross-town road in New York, where greater speed is acquired and where the difficulties of steep grades are easily overcome and the consequent

wear and tear upon the horse-flesh is got rid of. Experiments are still in progress with electricity as a motor, and electric tramway systems have been put into operation in several cities. Descriptions of these systems have heretofore appeared in THE MAIL.

In the United States the growth of the street-car system has been so rapid of late years, and so generally has it been adopted and its advantages demonstrated, that in newly settled places it is sometimes considered better to construct horse railroads than to go to the expense of costly and laboriously made highways.

#### An Ingenious Device.

**T**HROTTLING the steam is done with railway engines to a great extent because the ordinary reverse lever and widely notched quadrant do not provide the means of regulating the admission of steam close enough to meet all requirements of engine running. An ingenious device for graduating the point of cut-off consists in making the pin connecting the reach-rod to the reverse lever cam shaped or eccentric, and an attachment is put on for revolving the pin as the engineer desires. As



STEPHENSON'S TRAM-CAR MANUFACTORY.



LATEST STYLE OF AMERICAN TRAM-CAR, 1887.

dle, which enables the driver to exert his force with the greatest speed and efficacy, while the whiffletree, with its hook-latch, which closes automatically, effectually prevents the possibility of the car being detached from the horses without the knowledge of the driver. Further protection is afforded by means of guards before the wheels for the purpose of removing any accidental obstruction that might be placed upon the rail, and the depressed platform brings the step nearer the ground, facilitating ingress and egress, and with the minimum of risk to the passenger.

Experiments have been made with dummies or a system of steam-cars by the West Philadelphia Passenger Railway Company, but after a fair trial their failure was amply demonstrated, and no attempt has

the centre of the pin in the lever is not coincident with the centre of the part holding the reach-rod, revolving the pin has the effect of lengthening or shortening the reach-rod. This movement is made sufficient to cover the distance represented by the movement between two notches in the quadrant. If the engine is running along in, say, the 9-inch notch, but is lagging a little and not enough to require the increased valve travel that the next notch will give, the ordinary practice is to advance the lever and partly close the throttle. With this attachment the lever operating the cam is turned and the links dropped to the point where the engine will handle the train easily and no throttling is necessary. This is equivalent to the fine movement obtained by a screw reverse-gear, and it has none of its disadvantages.



## Government Intelligence.

### Foreign and Domestic Relations.

INTERNATIONAL MEDICAL CONGRESS—THE TARIFF—CHINESE CONCESSIONS—JAPANESE IMMIGRATION—THE TREATY WITH RUSSIA—EXTRADITION TREATY WITH GREAT BRITAIN—EXTRADITION TREATY WITH THE ARGENTINE REPUBLIC—A NEW REPUBLIC—THE HAWAIIAN SITUATION—THE FISHERIES—REVISED POSTAL REGULATIONS—THE PARCEL POST WITH MEXICO—NEW GOVERNMENT STAMPS—THE PUBLIC DEBT—JUBILEE EXHIBITION AT ADELAIDE—TELEGRAPH COMMUNICATION WITH VENEZUELA—CONSULAR INVOICES—DIPLOMATIC AND CONSULAR APPOINTMENTS—NAVAL INTELLIGENCE.

THE capital has been invaded by an army of doctors. The International Medical Congress has been in session at the seat of government. Never before in the history of the country has such an array of M.D.s been presented to the citizens of Washington. From all parts of the world they came. While four-fifths of them were Americans, yet there were representatives from every quarter of the earth. The meeting of the congress was opened in Albaugh's Opera-House by the President of the United States, and the address of welcome was delivered by the Secretary of State, who, by the way, is a distinguished homoeopath, so 'tis said. The doctors have done a great deal of talking, plain and scientific, and have been the recipients of much attention, a reception being given them by the President at the Executive Mansion, with all its attendant honors of flowers, music and notable officials. The number of doctors in attendance has been variously estimated from 4,000 to 5,000. As the doctor is the visitor *par excellence* when at home, it is to be expected that the charms of our beautiful capital will be largely advertised throughout the length and breadth of the earth when the guests shall have returned to their respective homes. The hotels have reaped a harvest, for the doctor abroad is amply supplied with money to pay his way, and, as a rule, he is always liberal—carrying out the Scriptural injunction, "As ye have freely received, freely give."

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The tariff question has received new excitement from the many rumors with regard to the conferences of statesmen at the summer residence of the President. The quidnuncs are busy with explanations as to the plans that are being discussed and the methods that are being formulated for the legislators at the coming session of Congress. Everything, however, is conjecture, and the old tariff will not likely receive any beautifying touches until the talkative Congressman settles down for work.

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Much interest has been manifested recently in certain rumors and statements with reference to large concessions granted to a certain Count Mitkiewicz and citizens of Philadelphia by the Chinese Government. Just what these privileges are is not exactly known and concerning them nothing official can be learned at the Department of State. It is represented by Count Mitkiewicz and his friends that the papers granting the concessions are now in the possession of the Chinese Minister, and that the documents will be complete when the signatures of the Minister and of the Philadelphia syndicate are attached. The Chinese Minister says that he will put his name to the papers when "he is fully satisfied of the syndicate's solvency and the character of the men composing it." This statement from the wily old Mongolian shows his shrewd business capacities and rather throws an air of mystery around the "grand schemes."

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The story as told is about as follows: Li Hung Chang, the Viceroy, has signed a decree granting to Wharton Barker, of Philadelphia, Pa., and Eugene de Mitkiewicz, of New York, the sole and exclusive right to construct and operate telephone lines at the treaty ports of China for a period of fifty years. It is further proposed to reach the inland cities by a combination with the Chinese Telegraph Company. The embassy which accompanies Count Mitkiewicz bears a letter from the Viceroy to Secretary Bayard, calling attention to the long-continued friendship between China and the United States, and expressing a desire for a further extension of the commercial relations between the

two countries. It is also said that the count has brought with him a form of charter for a Chinese national bank, with the sanction of the Viceroy, which will be submitted to the Philadelphia syndicate for approval. Governor Porter, Assistant Secretary of State, and other governmental officials say that the department has neither official nor unofficial information concerning the concessions mentioned; therefore, for the present at least, the great hopes of Americanizing the Flowery Kingdom must be deferred.

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The expressed wish of the Chinese Government for a closer relationship with this country calls to mind the bitter warfare that has been waged against the Chinese people by the citizens of the Pacific Coast for a number of years, and even in the East much opposition has been shown to the industrious, hard-working Chinaman. So strong and rapid has grown this dislike that the government has proscribed them from coming to the free republic, and now upon our statute-books stands the law which singles them out from among all the nations of the earth and forbids their entrance here. The Californians seem more pleased with the Japanese, and only lately the papers of that State have been speaking in terms of praise of a Japanese colony which has located in Calaveras County, near Sacramento and San Francisco. The late comers from Japan are farmers, and have settled a tract of fifty acres, all improved. One of the San Francisco papers says the Japanese "possess all the virtues of the Chinese without their vices, and are assimilative to a much higher degree." In this country we have received only the better class of Japanese, and it can hardly be doubted that there are many gentlemen in China who would become good American citizens if given the opportunity and if they were properly shown the great resources of this land and the large advantages to be obtained by a home under a free republic. The worst class of Chinamen have poured into the ports of the Pacific Coast, and by this class the whole nation has been judged. Whether this is fair and just to one of the oldest peoples of the earth is a question for our legislators to grapple when they consider the immigration question, so soon to become a live and vital topic before the people of the United States.

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A society has been organized in Chicago for the purpose of defeating the projected treaty between the United States and Russia. It will hold meetings, distribute tracts and endeavor to establish kindred societies throughout the country. One of the promoters of the society says: "It has been stated that the society's projectors are mainly Nihilists or Anarchists. This is emphatically not the case. A treaty between this country and Russia is in some points of view an absurdity. There already exists an understanding whereby murderers and felons are extradited, and anything more is unnecessary. With Russia it is entirely different. There the only freedom still remaining to the political offender is the freedom of flight."

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It is thought that an extradition treaty between the United States and Great Britain will soon be negotiated, everything at present appearing favorable for such a result. The Canadians are becoming tired of offering an asylum to escaped felons from this country. Mr. Thompson, Minister of Justice, on behalf of the Dominion Government, is in favor of an enlarged extradition treaty and has so expressed himself. He puts the blame for the present condition of affairs upon the American Senate in rejecting the draft submitted by the Imperial Government. He also strongly urges that the list of clauses enumerating offenses against business and commercial honesty be increased.

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Mr. Hanna, the United States Minister to the Argentine Republic, now visiting in this country, has brought back with him an extradition treaty, which the Senate will be asked to ratify this winter. Mr. Hanna recently called upon the Secretary of State and informed him that the Argentine Republic is very anxious to establish closer commercial relations with the United States. With a view to such a policy it offers a subsidy of \$184,000 for ten years to any steamship company which will establish a regular line between Buenos Ayres and New York and give efficient and prompt service.

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A new republic has sprung up in South America. The tract of land which lies between Brazil and French Guiana has been declared by



its inhabitants an independent country. It is called the Republic of Counani. It has a coast line of 187 miles, and the population of 700 persons dwell mostly at Counani, the capital. The inhabitants are descendants of slave refugees from Brazil and greatly desired to be annexed to France, but the latter country, in observance of certain treaties with Brazil, refused the privilege, and they consequently set up for themselves, electing Frenchmen as their rulers. The resources of the country consist of agricultural products, minerals, timber and cocoa, about \$35,000 worth of which is annually exported; india-rubber, cotton, sarsaparilla, tobacco, vanilla, coffee, maize, rice, potatoes, dates, pineapples, &c. Breeding horses, cattle and sheep is also very profitable. A line of vessels will be run between Counani and Cayenne on one side and Para, in Brazil, on the other.

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The latest news from King Kalakaua's kingdom is to the effect that that monarch is fast losing his grip on his sceptre. He begins to realize, it is said, that the late political movements have destroyed his power, and that the coming elections, which occur on September 12, will leave him only a king in name. The English Government does not propose to be left in the lurch, if recent statements are true. Official advices received at San Francisco state that the British squadron had received definite orders to sail for Honolulu, and were supposed to carry explicit instructions relating to the payment of the recently negotiated British loan. The Hawaiian Government, it is reported, has decided to pay the loan, but not the exorbitant commissions demanded for negotiating the same.

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The much-discussed fishery question has gathered additional interest during the past month by its introduction into the English Parliament and the appointment of a distinguished Englishman as a commissioner. Aside from this there is nothing new to offer. When the matter came up in Parliament a member inquired if the Alaskan seal fisheries would be looked into, and was informed by the Secretary for Foreign Affairs that the seal-fishery matter would receive consideration. The British members of the commission will be the Hon. Joseph Chamberlain, the Hon. Lionel Sackville West, the British Minister at Washington, and some Canadian. As showing the feeling in Canada with reference to the commission, the *Montreal Gazette* may be quoted.

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It says: "The Canadian press assume that the commission is to determine terms upon which American fishermen shall be permitted to enjoy our inshore fisheries and commercial privileges in our ports, while the United States press, jumping at the same conclusion, criticise the consent of the Washington Government to a joint commission according to their political leaning. The purpose of the commission has nothing whatever to do with the commercial phase of the question, from the fact that a commission to define the three-mile limit and to provide for the protection of the respective rights of the two countries under the treaty of 1818 has been in contemplation for many months past, and from the fact that President Cleveland would hardly venture to deal with the commercial side of the subject until instructed by the Senate. If, as we have no doubt it will, the report of the commission upholds the Canadian contention and declares the American fishermen cannot enter our ports for other than the four special purposes specified in the convention of 1818, the United States will be more inclined to enter upon negotiations for a reciprocity of commercial privileges, such as were enjoyed under the lapsed clauses of the Washington treaty, and it may be hoped that the scope of the commission will be ultimately enlarged so as to include this most important phase of the subject."

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Secretary Bayard says there is nothing to add to what has already been published concerning the latest phase of the fisheries trouble. He has great reason to hope that a fair and final settlement will be reached of the differences which have always existed between the United States and Great Britain over the fisheries since 1818, and a final settlement of which differences has never been reached as yet. He corrects the statement that Canada objected to a proposition on the part of Great Britain to treat regarding the differences. The Canadian Government is very desirous that an amicable settlement shall be reached; it has expressed a wish that differences between the two countries regarding the fisheries shall be finally laid at rest, and,

on the part of the United States, he has met that desire with great pleasure and good-will. He further says that the commission will find the United States ready and willing to do her part toward securing good feeling between the two countries.

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Until officially notified of the appointment of negotiators by the British Government it is possible that no selection will be made of representatives of the United States Government. At the Department of State it is thought that the first conference will be held some time next autumn or winter, and that the commission will probably meet first in Washington and then go to Halifax.

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The revision of the postal laws and regulations provided for by the last Congress is complete and makes a book of about 600 pages. The volume contains all the postal laws now in force, and a carefully arranged compilation of the various statutes applicable to the department. The regulations contain few radical changes from existing methods, the most important being in the manner of keeping accounts in post-offices and in making returns thereon. In the past the postmaster was required to keep a record of receipts, a quarterly current account, and a general postal account. One class of expenditures or receipts were required to be entered in one account and another class in the other. Much confusion resulted from the nice distinctions between these accounts. The two accounts are now consolidated, so that but one return is rendered, which will be a complete exhibit of the business of the current quarter and also give the exact state of the postmaster's accounts with the department of postal business. Third and fourth class postmasters are to be furnished record books, in which their accounts can be easily kept on forms, and receipts and expenditures readily stated by merely filling the blank spaces with the proper figures. The regulations will be issued to the postmasters early in the present month and will go into effect September 15.

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A great many complaints have been received at the Post-Office Department that merchandise packages sent from this country to Mexico under the provisions of the new postal treaty, which went into effect July 1 last, have been detained at Paso del Norte, Mexico, for more than a month. It is said that these packages were not over four pounds six ounces each in weight, and were fully prepaid and addressed, and that all the requirements of the law were complied with. Colonel Bell, the chief of the Foreign Mail Office, will call the attention of the Mexican Government to these facts and request that they be forwarded by the quickest route to their destination and delivered to the proper persons, as the treaty provides.

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The Post-Office Department will, about September 15, change the color of the ten-cent stamp from red to green and the three-cent stamp from green to vermilion. The designs will remain the same. The color of the two-cent stamps on the envelopes will be changed from red to green, the four-cent from green to carmine, the five-cent from brown to dark blue, the thirty-cent from black to brown, and the ninety-cent from carmine to purple. The designs will be the same, except that the heads on the one, two, four and five cent stamped envelopes will be re-engraved and will have a slightly different appearance from the old, the ornamentation around them also being a little different. The department desires to have the color of the stamps on the stamped envelopes correspond as nearly as possible with that of the adhesive stamps, this being the main reason for the change.

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The Commissioner of Patents has furnished the Secretary of the Interior with a synopsis of his annual report, in which it is stated that the number of applications for patents of all kinds received during the fiscal year ending June 30, 1886, was 40,678, and during the year ending June 30, 1887, 38,408. He states that the condition of the business of the office will compare favorably with that of any previous year, and that the office may be said to be fairly up with its current work. Only one division was in arrears over six months and seven exceeding three months. He renews the recommendation that the Patent Office be furnished with more room and greater facilities and that the model hall and library room be restored and repaired. He also asks that Congress be requested to make provision requiring clerks of Federal courts to furnish the Patent Office, for publication in the *Official*



*Gazette*, certified copies of all decisions and opinions rendered hereafter in patent cases. The commissioner states that the number of patents granted during the year, including reissues and designs, was 21,732; trade-marks registered, 1,101, and labels registered, 384. The number of patents expired was 12,782. The receipts from all sources was \$1,150,046.05, and the expenditures, including printing, binding and contingent expenses, was \$981,644.09, which leaves a surplus of \$168,401.96. The balance in the Treasury to the credit of the Patent fund is \$3,168,401.96.

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The reduction of the public debt for the past month of August amounted to \$4,809,475. The total debt now, less the cash in the Treasury, is \$1,269,774,836, and of this amount \$1,060,853,712 is interest-bearing debt. The net cash in the Treasury when monthly accounts were settled up was \$44,760,908, or about \$1,000,000 less than a month ago. The gold coin and bullion fund in the Treasury was \$282,039,533, with liabilities of gold certificates outstanding amounting to \$88,765,340, thus leaving a gold fund balance of \$193,274,193, against \$186,306,330 a month ago. The silver coin and bullion fund was \$218,236,868, which, with certificates outstanding amounting to \$147,876,385, leaves a silver balance amounting to \$70,360,483, against \$72,455,105 on the first of August last. In addition to this silver-fund balance there is in the Treasury assets \$515,709 in trade dollars and \$6,637,495 trade dollar bullion, which have been redeemed under the recent law of Congress and which cost the government \$7,253,204. (Under the law the redemption of trade dollars by the Treasury Department expired on the third of the present month. The number redeemed was something over \$7,400,000. The amount estimated by the Director of the Mint to be in this country was \$7,036,732. The excess over his estimate arises from the importation of trade dollars for redemption from China and Japan.) The store of standard silver dollars now in the Treasury amounts to \$213,212,448, an increase of \$1,783,000 during the past month. The total coinage of silver dollars up to date amounts to \$270,200,117, and that of this amount \$56,987,669 are in circulation, against \$56,692,829 on September 1, 1886.

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Government receipts during August were very large, aggregating \$35,619,115, against \$32,195,326 in August last year. Customs receipts were \$22,686,768, or fully two millions more than during the same month last year; internal revenue receipts were \$10,850,398, against \$9,697,934 in August, 1886, and receipts from miscellaneous sources were nearly half a million more than in August last year. Expenditures during August were \$28,717,162, or about \$200,000 less than the same period last year.

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It is stated at the Department of State that no peremptory demand has been made upon the Spanish Government for the release of the Rev. Mr. Doane, who was arrested and imprisoned in the Caroline Islands, charged with inciting the natives to resist the authority of the resident governor. The case is being looked into by the department, and in the meantime the United States consul at Manila, where Doane is imprisoned, has been instructed to use his good offices in behalf of the prisoner. The department is not officially informed of the charges, but will see that Mr. Doane is accorded just treatment.

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The United States consul at Guaymas, Mexico, reports to the Department of State that Frank O'Brien, who claimed to be a naturalized American citizen, was executed at Hermosillo on July 23 for the murder and robbery in 1885 of F. W. Calkins, an American citizen, born in New York. O'Brien was sentenced to death in June, 1886, but took an appeal to the different courts until the sentence was finally confirmed by the authorities at the city of Mexico.

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There are no further particulars relative to the case of United States Consul Brigham, who was assaulted by the Mexican judge Zubia at Paso del Norte some days ago.

\*\*\*\*\*

The department is also in receipt of information from Mexico to the effect that the United States representative at Piedras Negras has made a thorough investigation of the recent murder of Jas. H. Duval, an American citizen, at San Rosa. It is stated that the Mexican authorities arrested seven men implicated in the murder, and sen-

tenced all of them to ten years' confinement in the penitentiary. Pending an appeal the prisoners have been sent to Monto Clara.

\*\*\*\*\*

The Consul-General at Melbourne has informed the Department of State that the Jubilee Exhibition at Adelaide is now being held. The United States, he regrets to say, has not made a good showing. He thinks it a fine field for American improvements in agricultural implements, and is of the opinion that labor-saving machines and other inventions would meet with a good market there. The government of Victoria, he says, is anxious to have the United States make a good exhibit in 1888 at Melbourne, a city of 313,000 inhabitants.

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The Department of State has received copies of a recent contract made between the Venezuelan Government and Cuenca Creus, of Venezuela, for the establishment of telegraphic communication between Venezuela and the United States. It is thought the scheme will be productive of great benefit to the two countries.

\*\*\*\*\*

In reply to a letter of a New York firm, stating that with invoices of goods sent from Antwerp, Rotterdam, Amsterdam and other shipping ports, the goods having been manufactured in the interior of Germany, Belgium, &c., it is impracticable at the time of shipment from the inland port to state the name of the vessel by which the merchandise is to be shipped, and consequently consular invoices cannot be forwarded until such information is received from the shipping port, Assistant-Secretary Maynard, of the Treasury Department, writes that the invoice may state the vessel by which the goods are expected to be shipped; that in cases where, from circumstances beyond control of the shipper, the goods are shipped by another vessel, the invoice may be presented to the United States consul at the port of shipment and have indorsed thereon the name of the vessel whereby the goods were actually shipped, thus avoiding any delay in the forwarding of the consular invoice at the time of the shipment of the goods. The State Department has been requested to instruct United States consular officers to indorse the certificate in such cases whenever requested, and in conclusion the Secretary says: "It is not seen, therefore, that any necessity exists for modifying, as requested, the rulings now in force relative to consular invoices."

\*\*\*\*\*

The Department of State has been informed that Professor Church, of Columbia College, New York, a distinguished mining expert, recently arrived at Tientsin, China, and entered the service of the Viceroy Li Hung Chang. He has made a personal examination of and full report upon the interior Chinese copper and silver mines, in which he deprecates the continuance of old methods of hand labor and recommends the adoption of labor-saving machinery.

\*\*\*\*\*

The following appointments in the diplomatic and consular service have been made since last issue; William P. Boyd, of Missouri, consular clerk; Almar F. Dickson, of Massachusetts, consul at Gaspe Basin; John O. Bridges, of New York, consul at Brockville, Ont.; Henry C. Borstel, of Maine, consul at Pernambuco; Robert A. Cowley, of Mississippi, marshal of the consular court at Ningpo; S. S. Carlisle, of Louisiana, Minister Resident and Consul-General to Bolivia; James C. Quiggle, of Pennsylvania, consul at Port Stanley and St. Thomas, Ont.; Samuel T. Williams, of Maryland, secretary of legation to Brazil.

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The Navy Department is informed that the United States steamship *Vandalia* would leave Callao for Honolulu July 21. The *Mohican* arrived at Callao July 8. The *Iroquois* arrived at Callao July 14 from Panama.

\*\*\*\*\*

Rear Admiral Chandler, in command of the Asiatic station, in a letter to the department from Kobe, Japan, August 9, reports the flagship *Brooklyn* to sail for Chemulpo, Corea, by the middle of August. The *Omaha* was to have sailed from Nagasaki for Chefoo on August 8, to meet the *Essex*. The *Polaris* was then en route between Yokohama and Kobe, and from there would go to Nagasaki for repairs to her boilers. The *Monocacy* was at Yokohama.

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The Navy Department is informed of the arrival of the United States steamship *Thetis* at Valparaiso August 23, on her way to Alaskan waters, having passed round the Horn.

M.



## Engineering and Machinery.

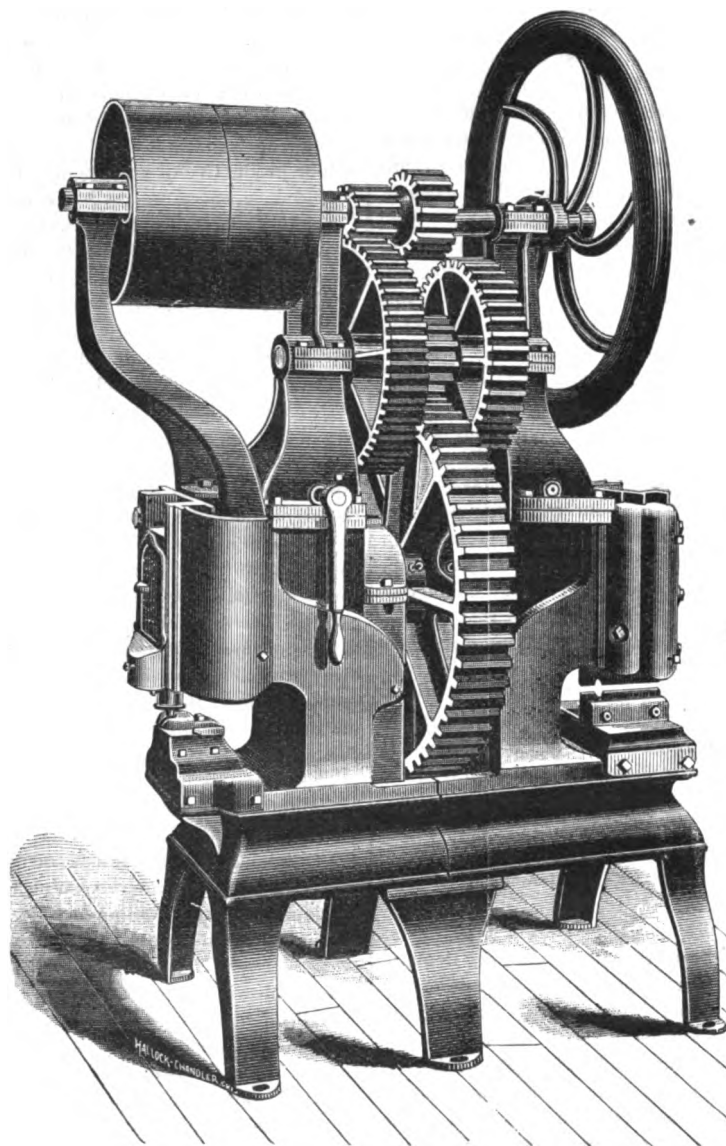
### Power Punch and Shears.

**B**OILER makers will be interested in the illustration of the improved power punch and shears manufactured by G. D. Colton & Co., and herewith given. The cut represents a No. 4, or boiler maker's machine, adapted to punching flanged boiler heads, from sixteen inches diameter upward and of any thickness. This is a strong machine, made of the best material, the stock in the bed and body being disposed in such a manner as to secure the greatest strength with as little surplus weight as possible. By a peculiar combination of the gearing each end is made to work independently of the other, and can be operated at the same time; the cutting and punching heads may be kept under the control of separate operators, and either can be instantly stopped or started up at will. The machine is so constructed that it is also perfectly adapted to light work, which it will perform with exactness and rapidity, the arrangement being such that the speed can be increased one-half simply by shifting the pinion on the upper shaft. By the use of extra heads the shears can be arranged to cut at any desired angle, making, if required, a diagonal cut of thirteen inches on plow steel seven inches wide. This machine is furnished with two punches and two dies and one pair of shears, or their equivalent. The upper shaft makes 225 revolutions per minute, and the number of strokes per minute at slow speed is eleven; at fast speed, twenty-two. The tight and loose pulleys are eighteen inches in diameter and eight inches face. Six sizes of machines of this class are manufactured by the firm mentioned, some of these being combinations of the other sizes. A number of leading manufacturers employ the Colton punch and shears. Among these may be mentioned the Niles & Scott Company, which uses the machine for punching wrought-iron wheel tires up to ten inches wide; the St. Charles Car Company; Haxton Steam-Heater Company, on boiler and blacksmith work for several years; the Strong Steam Forge and Machine Works; the Johnson Iron Works; the American Brake Company, besides many others.

### Electric Signal.

**A**N electric signaling apparatus for machinery is designed for notifying an attendant, automatically, when the carriage or other moving part of a lathe, or other similar machine in which the tool or the work is fed automatically, has nearly reached the limit of its advance and needs to be returned to repeat its movement. It consists of a clamp of such configuration as to adapt it to be rigidly secured to some part of the machine whose movements it is designed to regulate—such, for instance, as a lathe, boring machine, or planing machine. The body of the clamp is lined with insulating material, and a thumb-screw for attaching the clamp to the machine is capped

with insulating material. It is thus apparent that the clamp will be insulated from the frame of the machine, electrical connection being made with the clamp through a binding-screw. A lug is cast on the clamp and provided with a perforation, in which a rod is adapted to be adjusted longitudinally, a thumb-screw being provided to clamp the rod when the proper adjustment has been attained. Formed on or secured to the outer end of this rod is a knob having a transverse perforation for the reception of an indicator rod, which forms part of the circuit-closer. This tube is also adjustable within the perforation, and is secured, after adjustment, by means of a thumb-screw. The



POWER PUNCH AND SHEARS.

tube is made of metal and provided with a metallic sleeve, capable of sliding upon it. In the end of this sleeve is a plug, the diameter of whose shank is a little less than the inside diameter of the tube. A spring within the tube presses at one end against the inner end of the plug and at the other end against two screws or pegs, which also serve to prevent the turning of the sleeve upon the tube. A scale is marked on the tube to indicate, in connection with the sliding sleeve, how far the latter has advanced, and how far the carriage has been fed, and may still be fed with safety.

The application and operation of the parts described is as follows: The clamp is attached to any convenient stationary part of a machine in which the tool or the work is fed automatically. One pole of an electric battery is connected to the frame of the machine, and the other pole is connected, through an electromagnetic bell, with the clamp by the binding-screw, and so with the tube, sleeve and plug. It is evident that when the carriage has advanced far enough to come into contact with the plug the bell circuit will be complete, and an alarm will be sounded. This takes place a little before it is necessary to shift the carriage, thus giving time for an attendant to reach the machine from a distance in season to make the proper change. The scale and sleeve will indicate how imperative the need for promptness is,

and when the proper relation of the parts has once been fixed will indicate just the right point at which to change the carriage.

### Electric Railway Motors.

**I**T seems to be settled that electricity is to bear an important part in railway passenger transportation. A company in Richmond, Va., is equipping twelve miles of road, on which forty cars are to be run. The same company is also equipping roads at St. Louis, Boston, Woonsocket, Baltimore, St. Joseph's and various other points. At Pittsburg three roads are under construction. Binghamton is to have a road four and a half miles long, operating eight motor cars. At San Diego a road is being constructed nine miles long, over which four forty-horse-power motor cars are to furnish the traction. Not less than fifty-five or sixty roads are either under construction or projected in the United States, and the movement is continually extending. What will prove one of the heaviest industries in the country is apparently springing up as the result of the introduction of electricity as a motor.



### Road Wagons.

IN no part of the world has greater attention been given to the manufacture of light wagons for pleasure riding than in the United States, and the strength, toughness and lightness of American woods are invaluable aids in the production of the finest examples of vehicles of this class. The Kalamazoo Wagon Company, which has established its reputation for the production of pleasure wagons, manufactures a full line of

fine buggies, surreys, single and two-seated cutters, and fine buckboards, and is the patentee and exclusive maker of the celebrated Hicks road cart, an illustration of which is given. This cart is intended for use in speeding or breaking horses, and for general road use by farmers, merchants, physicians and others who want a light and durable vehicle. Its easy riding qualities have

made it a general favorite. In material and workmanship this cart ranks with the best; the wood work is of the best second-growth timber, and the cart is fitted with double-collar steel axles, coaxed, oil-tempered springs and Sarven patent or shell-band wheels, steel tired. The seat bars, which are of wood, are bent in such a way as to render the cart easy of access, but sufficiently high to keep the rug or laprobe in place around the feet. The foot-rest is made of slats, open, or covered with an easily adjusted rubber boot to keep the mud and

Tiene fuelle de suela ó goma elástica, tapizándose la calesa sea con suela ó paño, sendo muy blandos y elásticos los almohadones y todo lo perteneciente segun el más moderno modelo. La calesa llamada "Hicks Cart" se destina para gran velocidad ó para domar caballos, siendo muy útil para uso de los médicos, hacendados y otros que necesiten una calesa lijera y duradera. La Kalamazoo Wagon Company fabrica gran variedad de otros modelos de calesas, con uno ó

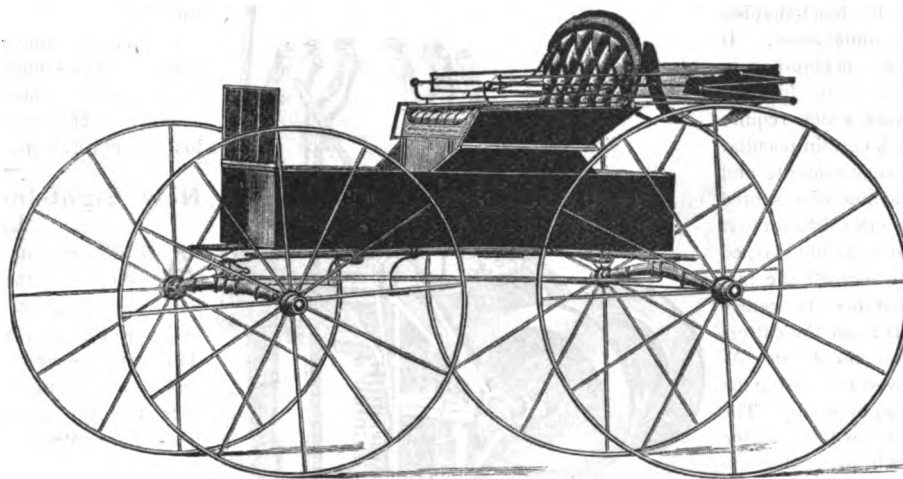
dos asientos. Sus talleres son muy grandes, puesto que continuamente emplean unos doscientos operarios.

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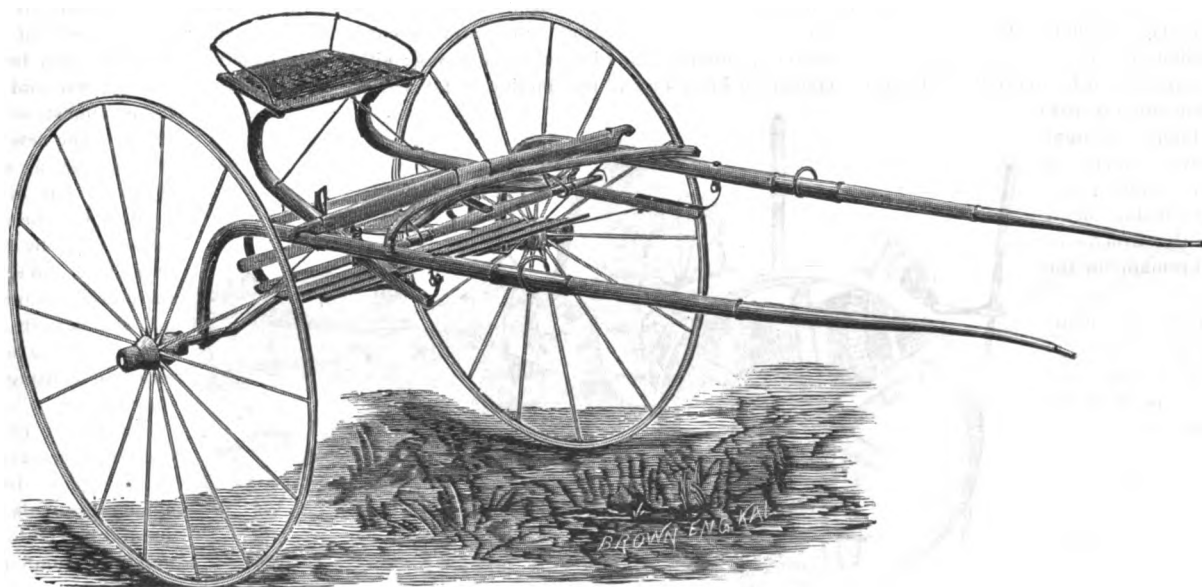
### Drill.

A NEW four-spindle sensitive drill, of somewhat novel design, has the spindles all driven with a single endless belt, which, without lacing, gives smooth and easy motion, without vibration. The endless belt also

gives largely increased belt contact. This belt is kept at proper tension by means of two tightening pulleys on movable studs. This enables change to be made in the ratio of the velocity of the spindles without changing the length of the belt. The spindle-driving pulleys run on studs attached to the frame, thereby taking all lateral strain from the spindles, which are driven by a bushing and key in the top of the hub of the spindle-drivers, the key fitting into the spline in the spindle. Either of the four spindles can be adjusted as to height by



LIGHT BUGGY.



HICKS ROAD CART.

dust from the feet. The cart is finished in natural wood, oiled and varnished or painted in good color, as wanted.

The other cut shows the design and style of a side-spring buggy made by the same firm. This wagon is well made, finely finished and can be had with rubber or leather top, upholstered in broadcloth or leather and otherwise handsomely trimmed and furnished.

### Calesas.

LOS adjuntos grabados muestran dos modelos de calesas ordinarias que se distinguen por la solidez que tienen y asimismo por el poco peso, sin hablar de las demás buenas cualidades que reúnen. Salen del taller de la compañía fabril "The Kalamazoo Wagon Company." La "calesa con fuelle" está primorosamente acabada.

simply loosening a hand-nut on the back of the post. The weights of the spindles, feed-levers and chucks are counterbalanced, so that there is no resistance to downward motion except the material being drilled. The drill will drill holes from 0 up to  $\frac{1}{2}$  inch, and is complete and compact. It is mounted on a column, and has a heavy table with a drip groove for oil or soda. The spindles are made of tool-steel  $\frac{3}{4}$ -inch diameter, 23 $\frac{1}{2}$  inches long. They are adjustable on the post to a distance of 12 $\frac{3}{4}$  inches from the top of the table to the bottom of the spindle, and when set have a throw of 3 $\frac{1}{4}$  inches by the feed-lever. The distance from centre to centre of the spindles is 6 inches; from the face of the column to the centre of the spindle 5 inches. The spindle-driving pulleys are 3 $\frac{1}{4}$ , 4, 4 $\frac{1}{4}$  and 5 $\frac{1}{2}$  inches in diameter. On the back stud the tight and loose pulleys are 4 $\frac{3}{4}$  inches in diameter.



### Barrel-Making Machinery.

**A**MONG the numerous inventions of American machinists the various machines devised for the manufacture of barrels claim high rank. The perfection attained by the use of automatic apparatus for cooperage work is amply demonstrated by the results of the productions of the factory of E. & B. Holmes, of which two illustrations are herewith given. The engraving of the No. 60 head-shaping machine will be readily understood. It shows the head of a cask as it is clamped in the machine while its edge is being formed. There are packages or casks which require heads of exact size, and with certain peculiar formed edge, to meet the requirements and form of the croze. The machine represented is well calculated to perform this difficult part of cooper work. The head is firmly clasped or held and revolved slowly against the fast revolving cutters. The distance the centre of the head as it revolves is from the cutters determines the exact size of the head. As this cutter-head can be moved to or from the centre, any size of head can be made. The shape of the revolving cutters will determine the form of the edge of the head, so that exact size and desired form can be given to it. The machine is so made that the heads are very quickly put in and released from the machine, showing very perfect and rapid work. The capacity of this machine is 2,000 heads per day; it weighs 1,300 pounds, takes up a floor space of 4 feet by 6 feet, contains 96 cubic feet; the pulley on the machine is 6 inches in diameter; the speed of the cutting-head is 3,000, and the revolutions of countershaft are 650; the tight and loose pulleys are 12 inches in diameter, 6-inch face; the horse-power required is four.

The machine for driving truss hoops by power, represented by the cut No. 61, and called by many the "Yankee" cooper, is known as a practical machine for driving truss hoops on tight barrels. When made as the cut represents it, it is said to give satisfaction for driving the thin iron hoops that are to remain on the casks.

The drivers are made to adjust themselves to the barrel, and bear upon the hoop in twelve places to prevent the hoop from bending or getting out of proper form while being driven on to the barrel as firmly as the strength of the iron in the hoop will allow. The devices for operating the drivers so as to admit and remove the cask from the machine, as well as to bring them to bear on the hoops, are such that the work is performed rapidly and well, improving the quality of the casks made, and a

great saving to the manufacturer. This machine weighs 3,000 pounds; floor space required, 6 feet by 6 feet; it contains 160 cubic feet; the speed of the friction-shaft on the machine is 800; the pulley is 12 inches in diameter, with 6-inch face; horse-power required, two.

### Maquinaria de Hacer Barriles.

**D**AMOS ilustraciones de máquinas de hacer barriles, mostrando uno de los grabados una máquina de tallar fondos de barril y otra de apretar arcos delgados por medio de fuerza motriz. La de tallar fondos está admirablemente bien adaptada para el objeto que tiene. Tallará fondos de cualquier tamaño, siendo vertiginosa la velocidad con que funciona.

La máquina que se destina para apretar arcos de hierro delgados es sumamente práctica y rápida cuando obra, con lo que se economiza mucho tiempo. Sus fabricantes son los Señores E. y B. Holmes.

### New Eight-Inch Swing Engine Lathe.

**A**N illustration of a new screw-cutting engine lathe lately introduced by Sebastian May & Co., builders of foot and power lathes, will be found on page 65. This lathe swings eight inches over the bed, and is made in three lengths to take twenty, thirty and thirty-six inches between centres. All of the parts are of the most improved and latest pattern. With this lathe iron, steel, brass, bone, wood or ivory can be turned. It will also do polishing, milling, drilling, screw cutting, and in fact any kind of work that may be done on a larger lathe proportionately, and the work is done satisfactorily, as the lathe is intended for and will do accurate and solid work. The head is detachable, so as to admit of readjustment when necessary. All bearings are hand-scraped; the tail-stock

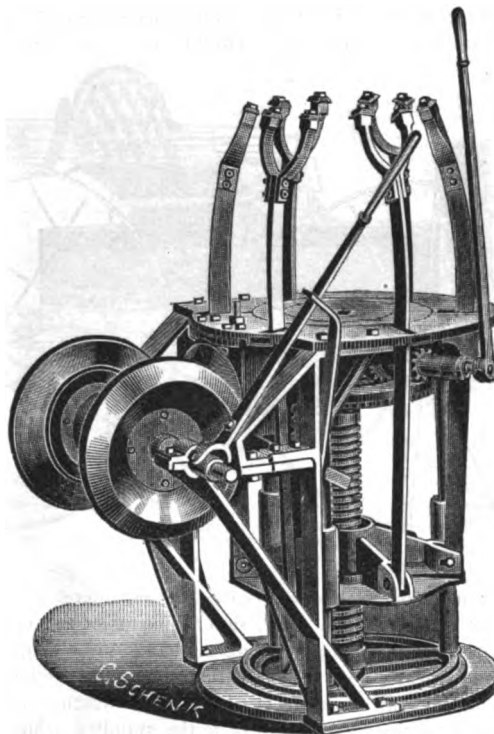
sets over for turning tapers; the carriage is gibbed both in front and back; the gears are cut from solid metal; the spindle is of steel, run in gun-metal boxes; either right or left hand threads may be cut; the foot motion is the easiest, stiffest and lightest known, and runs the lathe almost without an effort. The new patented foot-treadle, as shown on the front bar of the foot motion, may be slid along to any point by the operator's foot, and it increases the power obtained vastly, and also permits the operator to run the lathe while either in a sitting or standing position.

A face plate, two pointed centres, necessary wrenches and gears to cut all standard threads from 3 to 40 (and by combination an unlimited number of others) are furnished with the lathe.

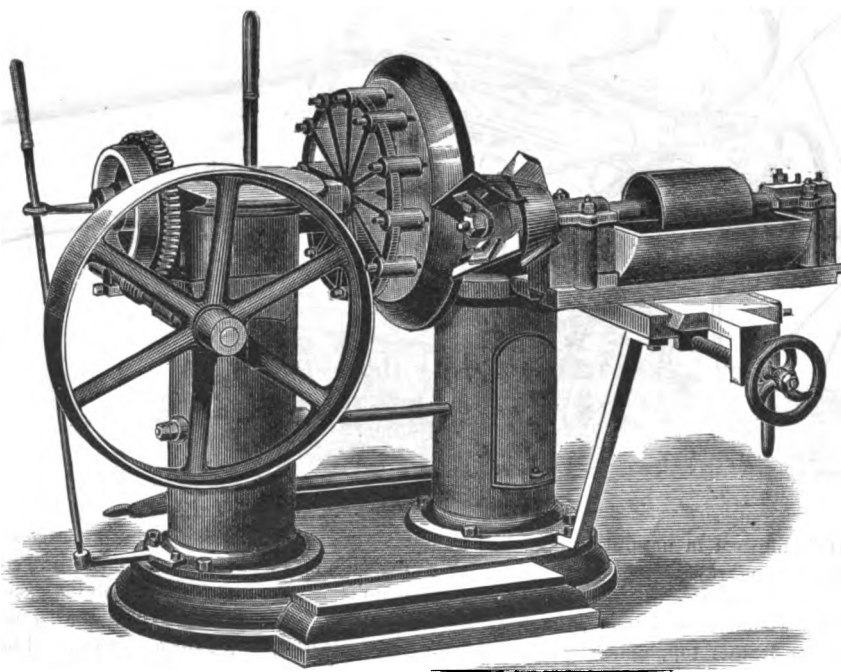
The manufacturers will furnish a countershaft, when so desired, instead of the foot motion, or the machine can be had with both countershaft and foot motion.

This lathe is peculiarly adapted to the export trade as it can be taken apart and boxed closely and shipped safely to any part of the world.

Besides this lathe this firm builds several other sizes of foot and power lathes, drill presses, shapers, &c., and also manufactures a variety of machinists' tools, and it will mail its illustrated catalogue



No. 61.—MACHINE FOR DRIVING THIN HOOPS BY POWER.



No. 60.—HEAD-SHAPING MACHINE.



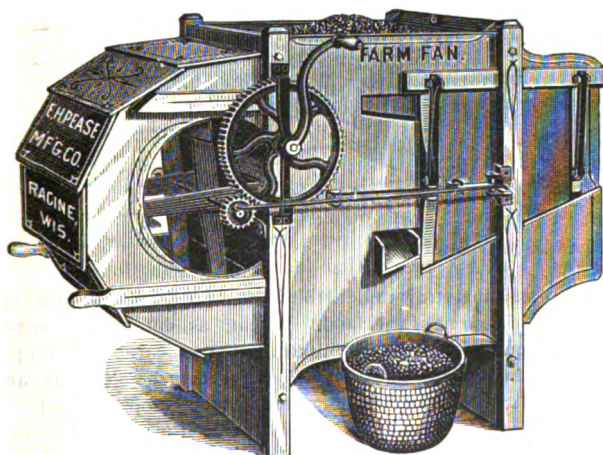
to any address free. This catalogue should be in the hands of every one contemplating purchasing machinery.

### Torno Mecanico Reversible de á 8 Pulgadas Recien Ideado.

**A** COMPAÑAMOS el grabado de un torno mecánico reversible de á 8 pulgadas recientemente inventado é introducido por los Señores Sebastian May y Cia., cuyo anuncio se halla estampado en otra columna. Este torno balancea ocho pulgadas sobre su cama y está construido para tomar 20, 30 y 36 pulgadas entre contros. Se puede usar para tornear metales, madera y márfil y asimismo para otra clase de trabajos propios para tornos. Todas las piezas están bien ajustadas y la máquina entera está sólidamente construida del mejor material. El aparato de pedal es muy cómodo y el operario puede hacerla funcionar sea de pié ó sentado. Está especialmente adaptada esa máquina para embarque, puesto que se puede desarmar y seguramente envasar.

### The "Pease" Farm Fan.

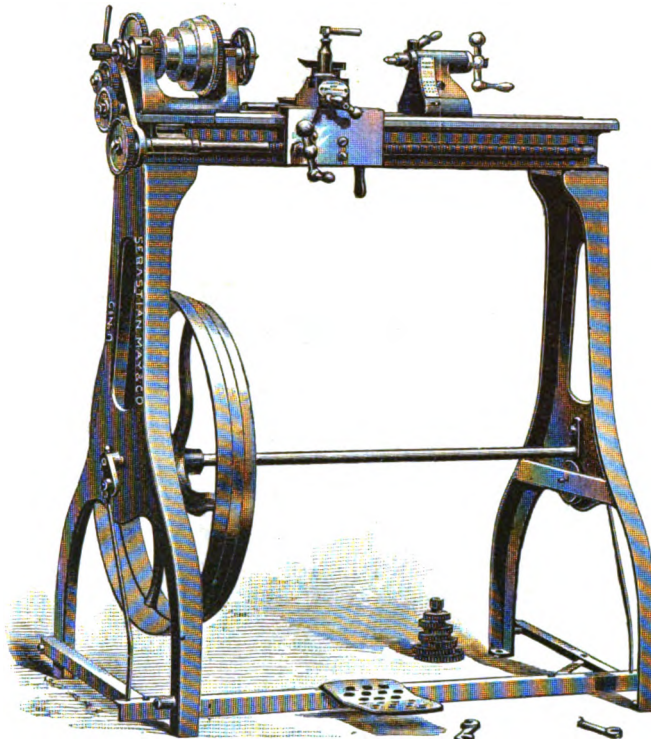
**A** USEFUL machine for farmers is shown in the illustration of the fanning mill or "farm fan" on this page, the cut showing the "right" or crank side of the machine. This mill is made by the E. H. Pease Manufacturing Company in two sizes, viz., Nos. 1 and 3, the capacity of the first being from forty to sixty bushels per hour, and of the second from seventy-five to one hundred bushels. The No. 3 is said to be the largest fanning mill made in the United States, and while the No. 1 size will meet the requirements of the general farmer, the No. 3 is better adapted to and is preferred for use on large farms. Each mill is provided with one wheat hurdle (or gang of three zinc sieves) one zinc corn and oat sieve, and one zinc barley sieve, one wheat screen,



THE "PEASE" FARM FAN.

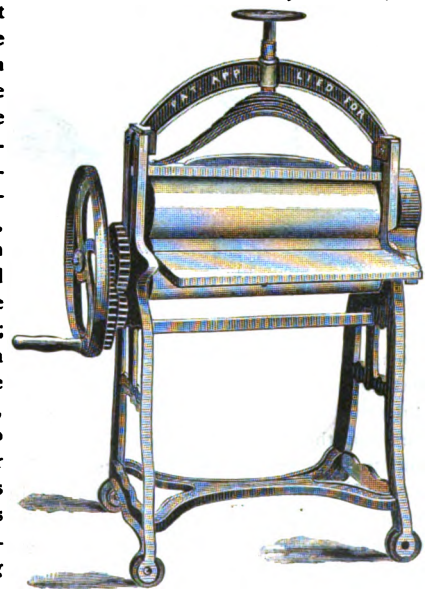
one wheat grader and side spout. This outfit of sieving for grain complete is called the "Commercial." All other sieves and screens for cleaning grass-seed, flaxseed, &c., are extra, but are furnished at nominal prices when ordered with mills as part of the outfit. The "grader" is a narrow sieve which brings the No. 1 or best seed out at the side spout, and can be left out when cleaning for market. For cleaning, screening, separating and grading all kinds of grain and seeds these mills are said to be unexcelled, either as to speed or qual-

ity of work. They are intended to meet the demands of that class of customers which requires first-class machinery. They are built of the very best materials, finely finished, and furnished with all-zinc hurdles and grain sieves. Going long distances these mills are shipped "knocked down," which saves about one-half in freights. Mills going to parties who have had no experience in putting them together are marked so as to be readily set up. Printed directions for setting up and also for operating them go with all mills. All machines are guaranteed for the work for which they are designed.



NEW EIGHT-INCH SWING ENGINE LATHE.

vantages which merit notice. The "Domestic" mangle and wringer is the subject of recent and patented improvements. It weighs 290 pounds; its height, on rollers, is 4 feet 5 inches; its width is 2 feet 9 inches. The machine is compact and easily handled, the system of gears making it easy to operate, while the pressure on the roller given by the spring makes the operation perfect; the frame is attractively painted and varnished. This machine is especially adapted for table linen, bedding, under-clothes and all plain ironing. White shirts and starched goods can be ironed to great advantage; by putting them through the mangle they are straightened and pressed, so all that is requisite is to draw a heated iron over the parts where stiffness is required, such as bosoms and wristbands, thus heating the starch and making it stiff, besides being done in about one-quarter of the time that is required by the old process. The work is done by pressure only (which is caused by a strong spring above the roller, and 2,000 pounds or more can be put on if necessary. There is no heat used. The roller is made of hard maple wood, well seasoned, and the framework is made in the strongest and most durable manner. The A. P. Dickey Manufacturing Company is the manufacturer.



DOMESTIC MANGLE AND WRINGER.

### El Aventar Modelo Pease.

**L**A ilustracion que adjuntamos representa el aventador para separar granos al uso de los agricultores que pasa bajo la denominacion de aventador modelo "Pease." Está provista esa máquina de cribas para limpiar trigo, mais, avena y cebada. Se proveen tambien si lo desean cribas para semilla de yerba, lino, &c. Segun nos aseguran es aventador insuperable en lo que se refiere á la rapidez con que funciona y la perfeccion de la obra que se logra sirviéndose de él. Está hecho del mejor material y se envasa desarmado ó en secciones para embarque.

### "Domestic" Mangle and Wringer.

**L**AUNDRY appliances are numerous, and among them are machines for saving time and labor in ironing. The mangle is one of these; but in the improved form in which it is illustrated it offers ad-



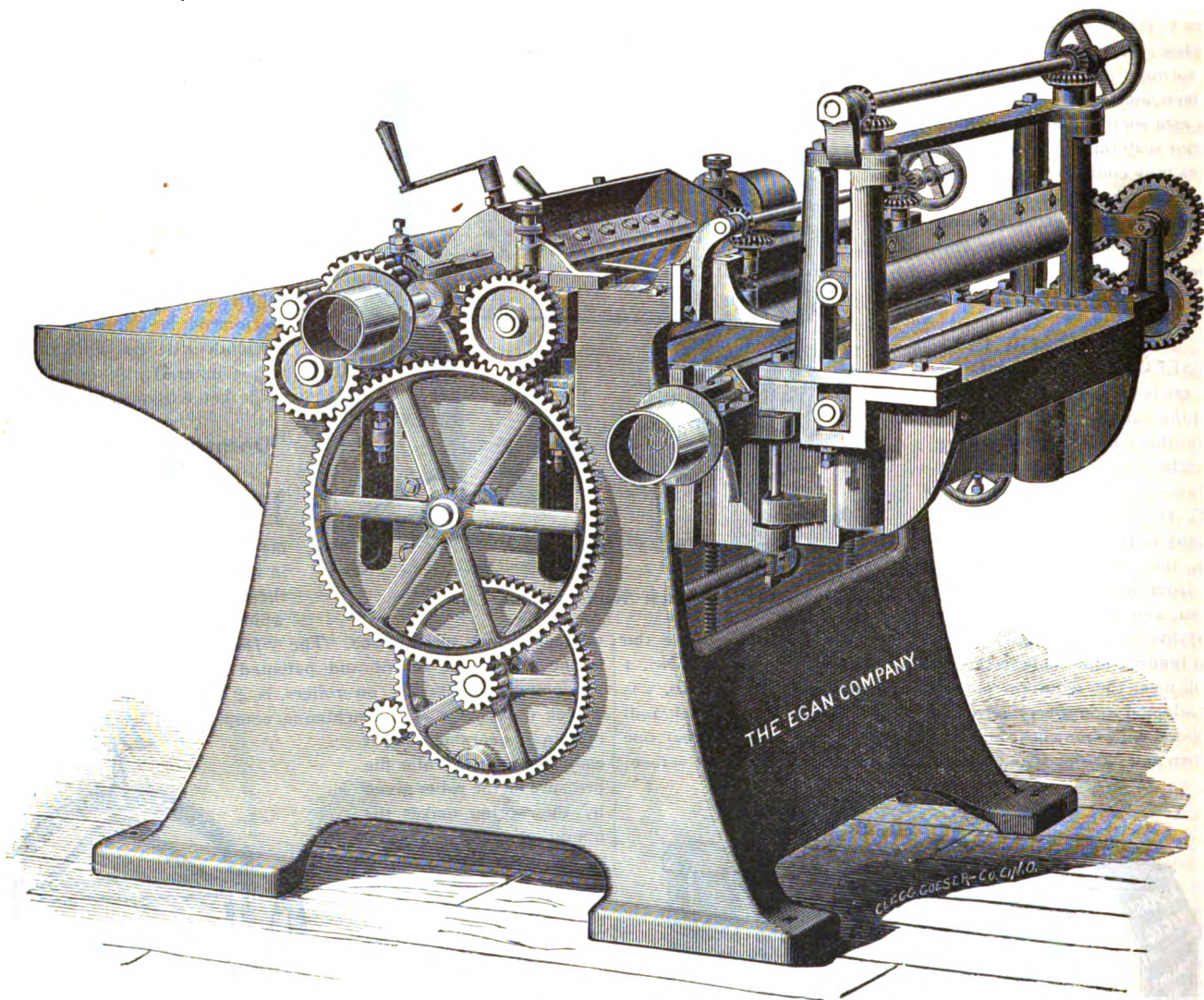
### New Double-Cylinder, Six-Roll Planer and Smoother.

**A**N illustration is given of an extra heavy six-roll double surfer, possessing special advantages and conveniences for doing extra smooth work, and also for taking a pretty heavy cut in the hardest kind of wood. This machine is specially adapted for all wood-workers requiring a smoothing planer to surface on both sides, and it is also specially adapted for replaning either long or short panels, wide or narrow pieces, and is said to give them a finish a little superior to any that can be made by almost any other class of machine. The frame is very solid and stiff, and the bed is dovetailed into it, and gibbed in such a manner that any wear can be instantly taken up. The feed

of all classes, and even planing mills and mantel manufacturers can use this machine to the very best advantage. It is a machine of very large range, planing 26 inches wide, both sides, and 6 inches thick, and the feed is heavy enough to feed the board against almost any kind of a cut the machine will stand up to. This machine is made by the Egan Company.

### Combined Harvester and Thresher.

**T**HIS machine is intended to head grain and transfer it at once to a connected thresher, so that the complete operation of cutting and threshing will be accomplished in the same time usually required by the ordinary harvester to do the cutting alone. The value of straw in some sections is so little that it is better to head the grain and



NEW DOUBLE-CYLINDER, SIX-ROLL PLANER AND SMOOTHER.

consists of six geared feed rolls, all geared in a very superior manner, making one of the most powerful feeds that can be placed on a machine of this class. On account of the peculiar position of the pressure-bars, and the number of feed rolls, the machine is enabled to do very smooth work and also to do very short pieces. The upper main-head is of steel and double belted and runs in large, self-oiling journal-boxes, lined with the very best babbitt. The lower head is extra well arranged, and is set so that more or less cut can be given to the machine while the machine is feeding; in other words, the lower head is adjustable independently and can be changed while the machine is in motion. This advantage will be much appreciated by wood-workers in general, as it is found in no other machine of this class. The lower head is also arranged in such a manner that the outer end can be swung out of the way, giving free access to this head and making it very convenient for both setting knives and sharpening them. Every convenience and advantage is placed on this machine that can make it reliable. Furniture manufacturers, chair makers, fine wood workers

plow the remaining straw under, to act as a fertilizer, and prevent the rapid impoverishment of the land. Wheat, as cut by the ordinary harvester, requires considerable extra labor to care for it properly, since it must be bound, stacked and exposed to the elements, and in wet seasons it frequently moulds, and thus a crop is ruined. This machine is for the special purpose of "taking it in out of the wet" at one operation, and experience has fully demonstrated that this method in many sections of the country is superior to any other. The cutting mechanism of this harvester is simple, and is so arranged that it is particularly adapted to being raised and lowered at any time by the driver, to suit the height of the particular crop being cut. There is also special mechanism for conveying the heads to the thresher. On account of the absence of long straw, the thresher is a small, light and extremely simple machine. It is supported on the two main drive-wheels of the harvester, from which it receives its power. Comparatively little power is required to drive it, even when threshing and separating a heavy crop.



### Well Boring.

THE art of sinking a well by the boring process and using the tubing which is to form the wall of the well as a means of operating the drill, though a comparatively late invention, has seen many improvements within the last few years. One of the firms most largely interested in the manufacture and operation of these appliances is the American Well Works. This firm owns and controls sixty-seven inventions, covered by patents which are involved in its different well-sinking apparatus. The process is known as the revolving hydraulic well-sinking process, and it consists of a machine gripping and turning the well-casing. The lower end of this casing is shod with a steel cutter called a shoe, which is similar to a circular saw. It is made of the best of steel, and it will cut a path for the casing to follow down easily. The upper end has a hydraulic swivel connected with it, to which hose is attached. The hose conveys the water down the casing with great force, and, going to the bottom, passes out between the teeth of the cutter, carrying the dirt or cuttings up and out with its force, keeping the hole clear so that the pipe has a free and easy rotation. The casing forms the wall of the well when completed. This works on the same principle as the diamond drill, which works in harmony with this machine, with the exception of this process, which sinks a well without the drilling tools, the core being left standing in the tube to be worn away by friction or to be washed out, or when reaching beds of sand. When the core is of clay or a similar composition, on reaching beds of sand, gravel or cavities in the earth where water will run down into it, the water coming down the casing forces the core down and fills the cavity or percolations in the sand and gravel, stopping it up and making a clayey wall round about the casing, keeps the quicksands from caving on to the casing, and makes a clayey wall in the caving substance in the earth. In case there is not a sufficient core to make this clayey wall clay is forced down the tubing, which seeks to pass through the percolations in the earth where water passes and stops them up. This prevents the quicksand and gravel or other caving material from crowding against the casing and stopping the work. The casing in this process must be kept in constant revolution and a continuous stream of water down the tubing maintained until the well is completed, as it would become fast by the pressure of the loose material against its outer surface. Accordingly the machinery is so arranged that it is not necessary to stop the tubing being turned or to stop the water being forced down, from the time work is commenced until the desired depth is attained or material met that the steel cutters will not penetrate. In that case, if it is desired and known or expected that such materials will be met, a set of diamonds can be put in that will penetrate everything met in the shape of the hardest boulders or granite.

The cut shows the derrick and engine ready for operation. Two lengths of pipe are set up and connected together in the derrick, the steel cutter is put on the bottom, and the hydraulic swivel is screwed to the upper end. A rubber hose is connected to the swivel, the other end being connected with the tube, as shown in the derrick, which conveys water from a steam force-pump. Each of the two hose shown in the

derrick has a water-cock attached, whereby water is turned on and off as required in the operation. The pipe is placed in the centre of the rotating device, the gripping jaws being tightened sufficiently to fairly grip the well casing to be sunk. The casing is then perpendicularly plumbed in the derrick, sufficient space being left for the coupling of the tubing to pass through and the machine is then started up.

The same firm makes a heavy double-pinioned rotary-swiveled machine, which will sink a tube from two to fifteen inches in diameter to a depth of 500 feet with 8-inch pipe, to a depth of 700 feet with 7-inch pipe, 900 feet with 6-inch pipe, 1,500 feet with 3-inch pipe, and 300 feet with 12-inch pipe. It will sink a 15-inch pipe 200 feet.

### Abrir Pozos.

MUY importantes han sido los perfeccionamientos que de algun tiempo á esta parte se han hecho en maquinaria para abrir pozos y procurarse un buen abastecimiento permanente de agua. La tubería que sirve para formar la pared del pozo se emplea igualmente para hacer funcionar la sonda. La compañía fabril "The American Well Works," cuya maquinaria flustramos, posee sesenta y siete patentes de inventos para esa clase de obras. La rapidez con que obra su procedimiento hidráulico giratorio es cosa extraordinaria. Es máquina que agarra y hace girar el tubo del pozo. La parte inferior del tubo se halla calzada de una cuchilla que llaman zapato, hecha del mejor acero y que corta el camino para que el tubo siga sin estorbo. El cabo superior está provisto de un eslabon giratorio hidráulico al cual se asegura más ó ménos cantidad de tubería de goma elástica. Esta conduce el agua hácia abajo dentro del tubo con gran fuerza, pasa al fondo y penetra al través de los dientes de la cuchilla, levantando el lodo y echándolo fuera con la propulsion del agua al par que mantiene limpio el agujero para que la rotacion del tubo se haga libre y fácilmente. El agua desciende dentro del tubo, escapa en el fondo y asciende en la parte externa del tubo. Este último efectivamente forma la pared del pozo cuando se halla completado éste.

Una de las ilustraciones muestra la grua y máquina listas á funcionar; otra un eslabon giratorio que es máquina de gran solidez y doble piñon y basta para hacer penetrar en el suelo á 1,500 piés de profundidad un tubo del 3 pulgadas de diámetro y uno de 15 pulgadas 200 piés y asimismo tubos entre estas dimen-

siones profundidades correspondientes. La compañía fabril, "The American Well Works," fabrica gran variedad de maquinaria para abrir pozos como tambien aparatos de bombear y su catálogo ilustrado es valioso libro de referencia.

A NEW dredging-machine has a shaft arranged within a suction-pipe, and provided with an Archimedian screw. Mechanism for raising and lowering the screw brings the dredge into action, the rotation of the screw agitating the sand, clay or mud at the bottom of the river, so that it is forced to ascend the suction-pipe.



MACHINE FOR SINKING WELLS.



## Hardware.

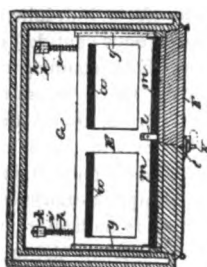
### Dry-Air Refrigerators.

WHEN it is necessary to keep food from taint and preserve it from the decay which is inevitable under changing conditions of temperature or atmosphere, we feel the need of some kind of apparatus which will meet every requirement. Such an apparatus is to be found in a perfectly made refrigerating chest or chamber, such as is to be found in Bettridge's dry-air refrigerator, of which two different forms are herewith illustrated.

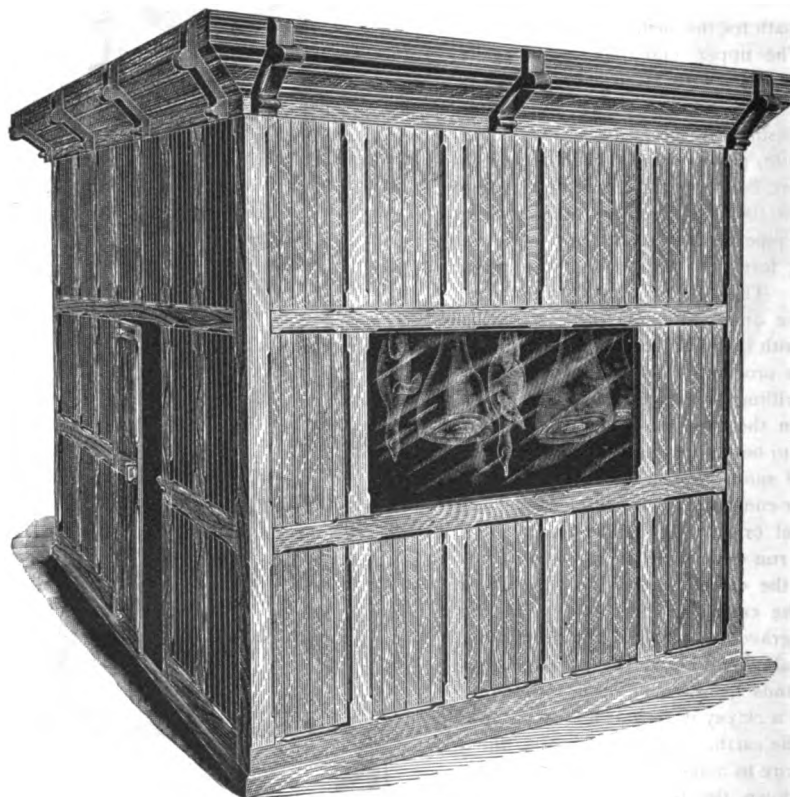
The two smaller cuts presented show in section the arrangement of a refrigerator for family use, No. 1 giving an illustration of the air-currents and the manner in which they are brought in contact with the condensing plates, depositing all moisture on them instead of the ice. The air is thus dried at each revolution, producing what is said to be a



No. 1.



No. 2.



DRY-AIR REFRIGERATORS.

perfectly dry air. Cut No. 2 shows Walker's automatic cut-off, by the use of which the warm and cold air-passages are closed every time the door is opened, and circulation is entirely suspended until it is again closed, waste of ice while the door is opened being thus prevented. This is applied to refrigerators when so ordered.

The largest cut gives an illustration of Bettridge's dry-air cooling-room, which is built with air spaces, no charcoal, sawdust or shavings being used as a filling to decay or form a refuge for vermin. One of the best waterproof conductors known is used in connection with this cooler, and the cooler is built in section, so that it can be readily taken down or put up. This is a specially useful refrigerator for grocers, butchers and others requiring a large cooling-room.

These refrigerators are manufactured by the Racine Refrigerator Company, which manufactures different sizes and styles adapted to varied requirements.

### Refrigeradores al Aire Seco.

ES menester que las neveras que se destinen para conservar carnes, legumbres y otros alimentos posean ciertas cualidades indispensables, sin las que no servirían absolutamente para nada. No es difícil comprender las ventajas que militan en pro de refrigeradores con aire seco; difieren éstos de los que ordinariamente se construyen en que hay aislado en ellos un compartimiento nevera en que el aire se mantiene absolutamente seco, con lo que se economiza hielo. Es

la compañía fabrica the "Racine Refrigerator Company" que fabrica neveras de esa clase. La ilustración que estampamos representa una nevera al uso de los carniceros, bodegueros y otros que trafican en alimentos de toda especie y tienen que conservar grandes existencias de ellos. Se pueden ordenar las neveras al aire seco en secciones de compartimientos, para que se envasen compactamente para exportación. Los grabados muestran de que manera llegan en contacto con las planchas de condensar las corrientes de aire en los refrigeradores, parándose la circulación luego que se abran las puertas.

### Automatic Cartridge Loader.

A NEW automatic cartridge loader which has just been put upon the market is so devised as to enable shotgun shells to be easily loaded at the rate of from six to twelve per minute, according to the expertness of the manipulator. The tool consists of a powder and a

shot chamber, with a wad tube or chamber placed between them, the three chambers being mounted on a frame. On this frame and between the chambers the wad plunger is placed. The cartridge is slipped into a swinging carrier mounted under the top plate. In operation the loader is screwed down to a table, with that part of the base having an opening protected by a slide, through which the cartridge is slipped projecting over the edge of the table.

In operation a small trigger is pressed to open the slide at the bottom of the cartridge holder. When the cartridge is in place a supply of powder is admitted by the motion of a small lever, and the large compressing lever is brought down, placing a wad firmly on top of it. Another motion of the small lever just mentioned, in the opposite direction, delivers shot to the shell, and the compressing lever finally places another wad on the charge. With the insertion of the shell the whole operation comprises only five movements, as the loaded cartridge drops out of its own weight when the slide is drawn for the insertion of an empty cartridge shell. Cardboard, pink edge, black edge, felt, merino or any kind or thickness of wad can be loaded in the shells or any combination load. After the compressing lever is pressed down to place a wad in the shell it is only necessary to release the handle. The spring on the wad plunger elevates the lever, releasing a slide, which immediately places a new wad in position under the plunger and directly over the cartridge shell ready for insertion into the shell when required.



## Electrical Appliances.

### The American Pocket Battery.

A VERY compact and efficient battery for the use of physicians and families is illustrated by the accompanying engraving. This battery is inclosed in a mahogany box seven inches long, four inches wide and two inches deep, and consists of an ingenious form of Trouve cell and an arrangement for securing two grades of strength of an induced or Faradic current. The cell is a cylindrical hard-rubber box, one end of which is attached to a rod of zinc and forms a screw-cap for the cell, the inside of the box being lined with carbon. To charge the cell it is about half filled with water and one or two small spoonfuls of bisulphate of mercury are added. The top is then screwed on and the cell placed in position, the pins or trunnions at either end resting in notches in two strips of metal attached to the inside of the box. Rotation of the cell serves to agitate its contents when the current becomes feeble, and with a proper charge the current will last an hour or more. Ingenious sponge-holders accompany the battery as well, a vial holding enough of the mercurial salt to answer for several charges and the necessary metallic cords for making connections. The contrivance for changing and interrupting the current is very simple and cannot possibly get out of order.

The small wire connections of the old-style battery—which were beneath the upper frame and were always wet when the solution slopped over and easily corroded, so as to destroy the instrument for



POCKET BATTERY.

use till repaired—are replaced by two nickel-plated brass strips on the sides of the box near the top and always in sight, supporting the hard-rubber cell and connecting it with the induction coil. In this form the connection is open to inspection, easily kept clean and free from the vexatious liability to get frequently out of order. The electrodes have nickel disks and hard-rubber handles, the former clamping the sponge or chamois skin, being thus easily adjusted. The induction coil is covered and protected by a polished hard-rubber plate. The vibrator is of German silver; the current is easily adjusted by a sliding tube or wholly cut off by moving a switch. Extra zincs for the cells are in handy form for replacing and are inexpensive. This battery can be carried in the pocket without danger of leakage. The Electro Medical Battery Company is the manufacturer.

### Bateria de Bolsillo.

A COMPAÑAMOS el grabado de una batería eléctrica de bolsillo para uso doméstico, tal como la fabrica la compañía fabril "The Electro Medical Battery Company," mostrándola la ilustracion con su estuche. Este, con la batería, está arreglado de tal manera que no pueda gotear, puesto que la celda es cilindro de goma elástica vulcanita, hallándose asegurada una extremidad del cilindro a una barilla de zinc y el interior de la celda revestido de carbon. Despues de llenar la celda de bisulfato de azogue y agua se cierra insertando la barilla y atornillando la extremidad. El aparato tal cual está solo mide 7 pulgadas por 4 y 2, no excediendo su peso de 16 onzas.

### Taschen-Electrisirmaschine.

EINE höchst praktische Taschen-Electrisirmaschine für Ärzte und den Familiengebrauch wird von der Electro Medical Battery Company fabrizirt. Beikommender Holzschnitt veranschaulicht die Batterie sammt Besteck. Man kann sie mit sich umhertragen ohne

dass Gefahr wäre, dass sie leckte, indem die Zelle aus einem cylindrischen Behälter von verhärtetem Caoutchouc besteht, dessen eines Ende mit einem Zinkstäbchen zusammenhängt, während die Zelle inwendig mit Kohlenstroff gefüllt ist. Nachdem die Zelle mit schwefelsaurem Quecksilber und Wasser gefüllt worden ist, schliesst man sie hermetisch mittelst des Stäbchens und schraubt das Ende nieder. Der ganze Apparat misst nur 7x4x2 Zoll, bei 16 Unzen Gewicht.

### Lighting Railroad Cars by Electricity.

THE problem of maintaining the electric light satisfactorily on railway cars has always been esteemed difficult. The storage battery as the immediate producer of all the electricity used has done excellent work, but has its attendant disadvantages. Primarily, the storage battery is not as economical as the dynamo. Again, a storage battery can only run for a certain period at a given rate.

The storage battery by its portability, however, seems to overbalance its defects, and does good work for this special application. The unassisted dynamo, necessarily dependent upon a supply of steam for its running, seems ill-adapted for train lighting.

A new system embodies both dynamo and storage battery, so as to obtain the merits of both. It seeks to overcome the defects of one source of electricity by the use of the conjugate generator. The main lighting agent is the dynamo. As this machine, with its motor steam-engine, works more economically when large, a single generating plant is used to light four or five cars. Not only is economy of generation thus attained, but space is also saved, as the passenger cars have no encumbering engine to take up room and heat the cars, and to annoy by the jar and motion. The dynamo and engine is placed in the baggage car. Steam is supplied from the engine. An 8 horse-power disk-engine with a 60-light dynamo is used. A steam hose coupled through to the engine provides the necessary steam connection.

This, with incandescent lamps, fifteen to a car, forms an effective and complete lighting plant, with one exception. As long as the engine is attached, the system will work. It matters not whether the train is stopped or in motion. The dynamo, being run by an independent engine, will always generate current. But if the locomotive is uncoupled, then the dynamo engine, being deprived of its steam, must come to a stop. If it were necessary to detach one or more of the cars supplied by it, the cars so uncoupled could receive no more electricity from the dynamo, and would be left in darkness. To provide against these contingencies, each car is provided with its own storage battery. Of this, twenty cells are placed in a box under the floor of each car. They are stored or charged from the same dynamo that lights the cars.

Just under the centrifugal governor of the engine an automatic switch is arranged. By the action of this mechanism the batteries are thrown into or out of the dynamo circuit, as required. When they run down and the current weakens, the switch closes and they receive a charging current. As soon as charged the switch opens and cuts them out, leaving them in condition for service whenever called upon. Normally, the greater part of the charging would be done in the daytime, so that the action of the dynamo at night, when the cars have to be lighted, need not be greatly complicated by the production of a charging current.

Switches to be operated by hand are also present in the system. By them the car lights can be turned from dynamo to battery or the reverse. Thus the contingency of a breaking down of the dynamo is effectually provided for.

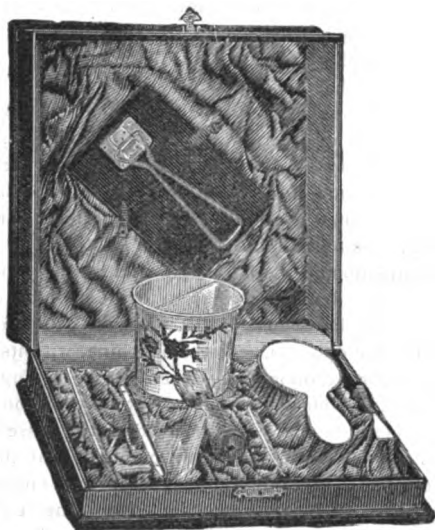
The electric light leads are connected between the cars by an extremely simple arrangement. Two half cylinders, whose faces form the contact plates, are held together in a spiral spring socket. This secures them so that no shaking can detach them; while a direct pull, as by the cars uncoupling, will draw them apart without injury. For the steam-coupling a species of union or faced joint is employed, held together by a screw and yoke. The joint is a metal to metal one, packing being dispensed with. It is so well made that the faces can be turned or twisted upon each other while the steam-pressure is on without an escape. A self-acting plate or valve drops over and above the opening when the line is uncoupled, to exclude sand and dirt. This coupling is of the simplest description, and does away with one of the difficulties of the problem.



## Fancy Goods, Stationery & Paper

### Toilet-Cases.

**G**REAT competition exists in the manufacture of plush goods, and every possible form of use has been taken up for the purpose of commanding attention. The silk-plush novelties in toilet-cases are specially noteworthy, the material with which the cases are covered coming in all varieties of colors and shades of color and presenting

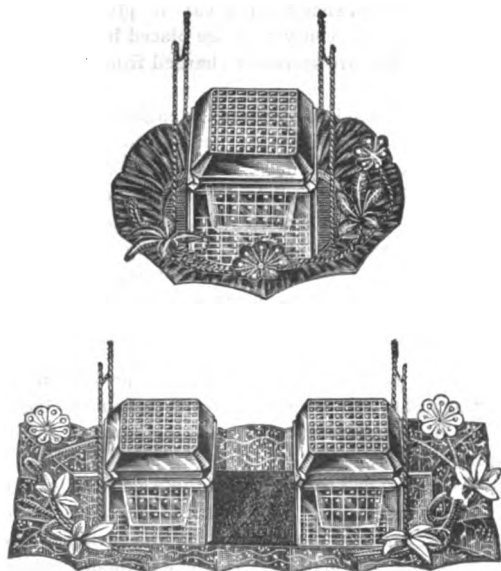


SHAVING-CASE.

pleasing effects when brought in the various combinations. Illustrations are herewith given of some new designs in toilet-cases of this description for both ladies and gentlemen. The fittings are superior, the cases rich in effect, and altogether these goods present attractions which secure ready purchasers.

### New Styles in Inkstands.

**I**LLUSTRATIONS are given of a new and odd line of inks in fancy brass goods lately placed in the market. The brass tray, which is light, neat and displays considerable taste, is either single or double,



NEW DESIGNS IN INKSTANDS.

as seen by the cuts, and is shown in four varieties with a bronze, brass, silver or antique finish. At the back of the stand is a pen-rack made of the same material, and in case of the double stands an ornamental strip of plush is between the two bottles. They can be had with or without the flower decoration in all of the styles, the difference in price being in proportion. The ink-bottles themselves are of good quality and of a desirable shape.

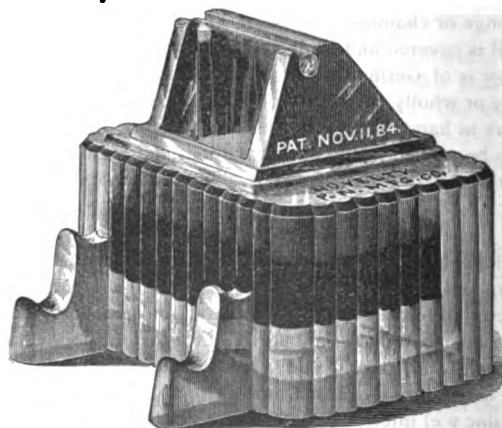
### The Novelty Inkstand.

**T**HE new inkstand herewith illustrated, and which is known as the "Novelty," is believed to be a capital article for the purpose. The inkstand consists of a heavy, ornamental glass stand, measuring  $3\frac{3}{4}$  inches long,  $2\frac{3}{4}$  wide and 2 deep, in the clear, having an extra large ink-well, and provided with a set of glass pen-racks in front. Its total weight is 27 ounces. Over the ink-well is a removable hood made of hard white metal, unaffected by ink, and heavily plated with nickel highly polished. In this hood is a flat valve, ver-



COMBINATION TOILET-SET AND JEWELRY-CASE.

tical and swinging to the rear, removably hung upon bearings in the hood, in which it is suspended by pins at its upper part, the valve resting against a flange in the front of the hood, so as to close the opening air-tight. The valve is of glass, so that it will not rust, and the pressure of the pen will injure neither valve nor pen, the quantity of ink in the well, as well as the color (if red ink be used) being known at a glance through the transparent valve. In front of the valve the metal is cut away below to form an open space, into which, when the pen is inserted, the point enters and presses back the valve, hinged above, the pen-point entering the ink and the valve closing by its own



NOVELTY INKSTAND.

weight the instant the pen is removed. The operation is noiseless and the pen-holder cannot be soiled with ink. The hood and valve are readily removed for cleansing, the valve being lifted out by the fingers applied to the ends of the projecting pins above. As the operation of the valve is entirely automatic, closing the opening each time the pen is removed, the introduction of dirt or dust is prevented, while the oxidizing action of the air is reduced to a minimum.



## American Industries.

### The Mitchell & Lewis Company.

**A**MONG the American manufacturers of wagons, for a wide range of practical uses, no house stands higher than the Mitchell & Lewis Company, of Racine, Wis., U. S. A., an illustration of whose works is given on this page.

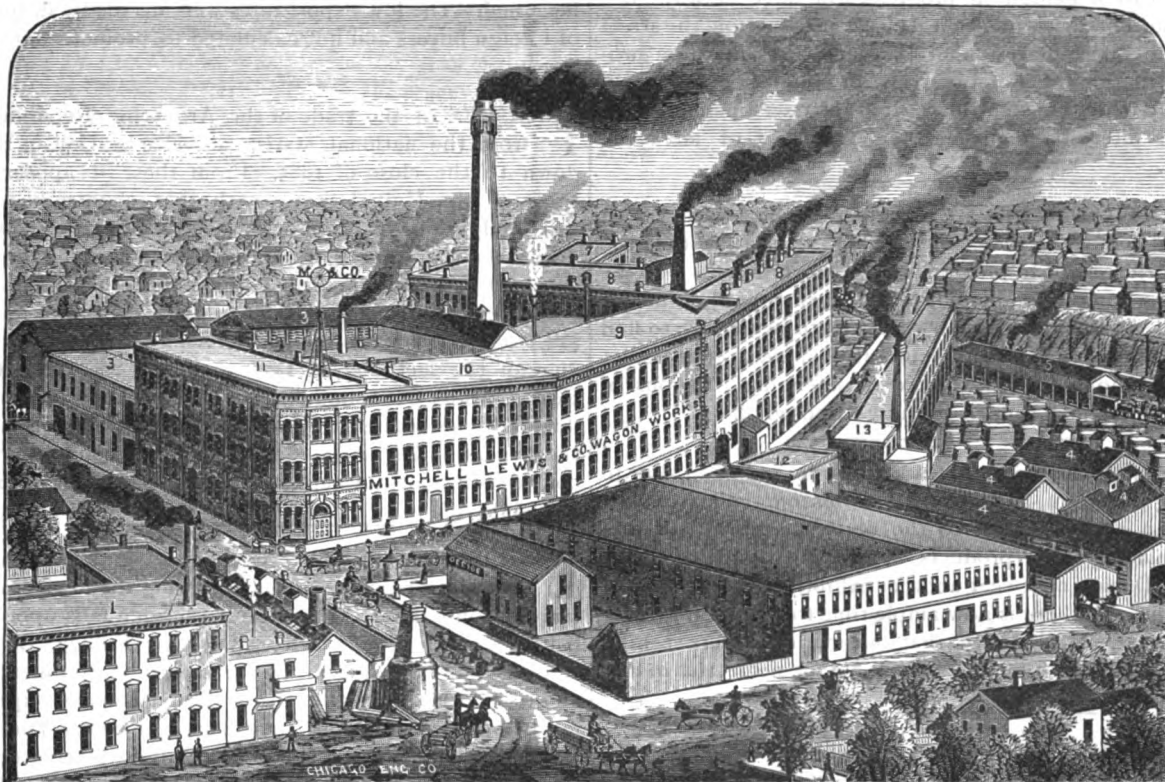
This house was founded in the city of Chicago by Henry Mitchell in the year 1834—more than fifty years ago—and its manufactory was subsequently removed to Kenosha, where Mr. Mitchell established large wagon works. Later the plant and business was removed to Racine, where it has remained, and its originator has become one of the leading commercial representatives of an enterprising and industrious community.

The company was incorporated in 1884 and consists of Henry

will respond without delay to foreign inquiries and invites correspondence.

### La Compañía Manufacturera de Mitchell y Lewis.

**L**AMAMOS la atención sobre el grabado que ilustra los talleres de la compañía fabril the Mitchell & Lewis Company, de Racine, Wis., E. U., de A., casa que se ha granjeado renombre en la fabricación de calesas, tanto para uso ordinario, como para paseo. Este taller fué originalmente fundado en 1834 por el Señor Enrique Mitchell, componiéndose la casa actual del fundador, sus hijos y yernos. Esta gran fábrica emplea unos 350 artesanos experimentados, capaces de diariamente producir y tener listos para uso unas 85 calesas. Los vehículos al uso de los agricultores y hacendados tienen la mejor reputación en buen número de países extranjeros, donde los usan, sin hablar de las cantidades que se venden en el país. Entre la gran variedad de vehículos que salen del taller de esos Señores hay también



WORKS OF THE MITCHELL & LEWIS COMPANY, RACINE, WIS., U. S. A.

Mitchell, his sons and sons-in-law, all of whom are actively engaged in the business. In the works managed by this company there are employed some three hundred and fifty hands, all experienced mechanics, trained to the work and familiar with the duties of their several departments, many of these workmen having been connected with the house for more than twenty-five years.

Henry Mitchell, the president of the company, is himself a practical mechanic, and having served a full apprenticeship to the business in his youth is, with his added years of experience, admirably adapted to the management of so large a concern.

The works of this company are capable of producing eighty-five wagons daily; they are engaged in the manufacture of farm, plantation and general business and delivery wagons, carts, &c., and also in the production of certain styles of light driving and pleasure wagons, all of which are illustrated and described in the illustrated price-list and catalogue issued by the company. A description of these works and the details of manufacture cannot be given for want of space, but it will be sufficient to say that the company makes its wagons from the best materials, a large stock of seasoned lumber being always on hand and the most improved machinery and appliances, together with the closest attention to every detail of manufacture, being employed to make the products of the factory all that they should be and pre-eminent for strength, neatness and durability. The company

carretones en gran variedad de modelos, adaptados para usos específicos, además de carruages. Acúdase á la compañía para el gran catálogo ilustrado que muestra la infinidad de modelos que provee.

### Die Mitchell & Lewis Company.

**W**IR illustriren hiermit die Fabrikanlagen der Mitchell & Lewis Company, zu Racine, Wis., V. St. von A., einer Firma, welche sich durch ihre Geschäfts- und Vergnügungs-Wagen einen Ruf erworben hat. Das Geschäft, aus welchem diese Fabrik hervorgegangen ist, wurde im Jahre 1834 von Herrn Henry Mitchell gegründet, wie denn auch die jetzige Gesellschaft als Mitglieder zählt Herrn Mitchell, dessen Söhne und Schwiegersöhne. Diese grossartige Fabrik beschäftigt nicht weniger denn 350 geschickte Wagenmacher, denen es gelingt, täglich 85 Wagen fertig zu stellen. Die Farm- und Plantagen-Wagen, welche jene Gesellschaft dem Gebrauch überliefert, sind im Auslande wohlbekannt und in vielen fremden Ländern in Gebrauch unbeschadet des bedeutenden Absatzes, den sie im Lande selbst finden. Fracht- und Rollwagen von sehr verschiedenartigem Modell je nach der Verwendung, die man damit beabsichtigt, bilden einen Theil dessen, was sie in den Handel bringen, ferner leichte Geschäftswagen und Kutschen. Illustrierte Kataloge, welche die verschiedenen Arten von Fuhrwerk bildlich darstellen, stehen Jedem zu Gebote, der sich dieserhalb an die Gesellschaft wenden möge.



# The American Mail & Export Journal.

Publication Office: 126 and 128 Duane St., New York, U. S. A.

Cable Address, *Catchow, New York.*

NEW YORK, SEPTEMBER, 1887.

**S**HORTAGE in the tobacco crop of the United States is apparent. Special reports gathered by parties immediately interested in obtaining information as to the situation show that in some sections the acreage planted is less and in other localities that the growth is no heavier than last year and in some places deficient. An advance in prices has followed.

**S**IAM, not to be behind in progress, will have railways, five being authorized, while that American invention, the street railway, is to take possession of Bangkok. When these proposed constructions shall get actively into operation Siam will undoubtedly take long steps forward in the development of her commercial interests, realizing the advantages of advanced civilization.

**E**XTRADITION treaties are in course of negotiation with several countries. They are needed. It is time that the civilized world ceased to provide refuge for criminals. If the malefactors who now escape judgment because of the want of international agreement for their rendition to justice are to find any place where they can enjoy immunity for their offenses, let them seek it among the unexplored or uncivilized regions of the earth. They may thus be usefully disposed of.

**T**HE international exhibition at Adelaide has been slow in getting into form, and we regret to observe the inattention of American manufacturers to the opportunity which it presents for placing their products before the people of South Australia. During next year another exhibition will be opened at Melbourne, and there is now ample time to arrange for representation there. It is hoped that our manufacturers seeking an export outlet for their goods will not be neglectful in this instance.

**T**HE manufacture of sugar from sorghum has not hitherto been assured of profitable operation; but it is now asserted that the long-continued experiments conducted in the West have resulted so successfully that this line of production can no longer be classed among the doubtful possibilities, satisfactory demonstration having been given of the ability to produce sorghum sugar at a cost not exceeding three cents per pound. Should this be made absolutely clear, the cultivation of sorghum will again become a feature of our agricultural operations, and the effect on the sugar-making industry of the world will be appreciable.

**C**ONSUL BRIGHAM, at Paso del Norte—a place very appropriately named—says that the location of that consulate on the frontier of Mexico and within a few hours' run, by rail, of many of the leading commercial centres of the Western States makes it one of the most important in our consular system. Since the construction of the Mexican Central Railroad Paso del Norte has become an important distributing point for all of the northern Mexican states. This road, traversing the heart of the country, brings the commercial centres of the United States into close connection with the business circles of nearly all Mexico. The facilities offered for travel and freight through this route are attracting what for years past, by slow means of transportation, followed the old Vera Cruz, Metamoras and Tampico routes. In the growing im-

portance of this consulate there is satisfactory evidence of the ability to extend our trade when the effort is made and facilities are afforded. Like industry and enterprise in other directions cannot fail to realize their reward.

**E**XPORT rates or through freight quotations by rail from Western points to New York, and thence per steamer to Europe, are to be advanced. The railway companies, in response to the protests presented on behalf of New York interests, have concluded to charge all freights from Western points for the seaboard, whether intended for exportation or otherwise, at the regular rate to the port of shipment designated and as if for consumption at that point. Where freight is taken on through bills to Liverpool the ocean rates will be added. Had the railway companies not taken this action, recourse to the Interstate Commerce Commission would have undoubtedly been had. The low export rates were decidedly in the interest of foreign buyers and not calculated to promote our home interests.

**F**IGURES of the trade of the Argentine Republic, secured from the national statistical office by Consul Baker, are down to the close of 1885. From these it appears that the trade of the United States with that country has increased threefold in ten years. For 1885 this was \$1,050,880 more than during the year preceding; but this increase was shown in the exports thence, the imports falling off to the extent of \$448,000. The combined movement in 1885, in values, is given at \$12,570,560, which, as the consul remarks, is very gratifying in view of the fact that in 1876 the total was only \$1,943,466. Better means of communication by steamship lines would undoubtedly be influential in largely extending our trade with the Argentine Republic. In all efforts to facilitate our intercourse with South American countries this fact should not be lost sight of.

**E**NGLISH consuls make complaint similar to that of the American representatives regarding the neglect of foreign markets, only that in their case the burden falls upon the English merchant. The activity shown by French, Belgian and German houses—particularly the latter—is commented upon, and it is declared that the British trader is being supplanted in markets once claimed as particularly his own. The Germans are the most indefatigable and painstaking in this contest for trade supremacy, and they even bear off the palm for cheap and worthless imitations of American goods, supplanting the Birmingham and Manchester traders in one of their favorite pursuits. The enterprise and energy which European Continental countries exhibit in the management of their commerce make it imperative that others who desire to compete with them should not be less diligent in their efforts. The manufacturers of the United States should take warning.

**S**HAMELESS imitations of American goods continue to be manufactured in Europe, Germany bearing a leading share in the presentation of worthless counterfeits of our products. We wish to caution foreign buyers against the fraudulent attempts to pass off inferior and unsatisfactory articles, purporting to be of American origin, and which never came from our workshops. The manufacturers of this country are ready and willing to supply goods of guaranteed quality, but they must not be held responsible for the abominable and good-for-nothing imitations which are offered to purchasers as being cheaper, and which purport to bear trade-marks or are offered as standard articles of American manufacture. Consul Bartlett, at San Salvador, again calls attention to these imitations. He states that iron "machetes" are substituted for those of steel, as manufactured in Connecticut and New York. The trade-marks of American artisans are stamped or im-



printed on the worthless German implements. He is informed that 50,000 "machetes" are sold annually in Salvador at an average price of \$3.50 each. American osnaburgs, sheetings, muslins and calicoes are driven out of Central American markets by goods bearing the brands and trade-marks of the best American mills. These worthless German goods, made of East India and Egyptian cheap, short-staple cotton, are utterly valueless. English manufacturers are also guilty, and have of late been sending to the Central American markets revolvers made in Birmingham, but purporting to be of American manufacture. It is needless to say that these arms cannot be relied upon, for they are utterly worthless and unsafe.

WHILE it cannot be supposed that Great Britain has been indifferent to the progress made by Russia in the extension of her railway lines eastwardly and southwardly, it has been a matter of no little surprise to lookers-on that there has been such neglect of countervailing operations on the part of a government which regards its Asiatic possessions as of supreme importance. If history is to repeat itself, as it seems likely to do, Russia will sweep down upon India and extend her empire as well as commerce to the Indian Ocean, or should she refrain from wresting imperial authority from England, she will so far control the trade of the East as to reduce English prestige and influence to a minimum. The commercial interests of Great Britain are being roused to the need of railway construction in India, and a new route is suggested to tap the ports of the Persian Gulf, either by way of the Euphrates, the Tigris or through Asia Minor, connecting with the existing Indian railway system at Kurrachee, this to be reinforced by a line starting at Hyderabad on the Indus, and running thence to Pachpadra on the Jodhpore Railway and bringing Kurrachee into railway communication with the Bombay Presidency. If these prospects are to amount to anything, they ought to be initiated at once, if they are not even now too late. As we have remarked, it is surprising that England has been so slow to act in a matter of such moment.

CONSIDERABLE talk has developed over the statement that the Chinese Government has given telephone, railway and banking concessions to one Count Mitkiewicz, and that the work is to be undertaken by American capitalists. It is definitely known that this report is true, but that the approval of the Chinese Minister at Washington of the financial standing and capability of the Americans engaging in the enterprise is a prerequisite to giving the concessions force. This matter has, of course, excited all of the jealousies of which rival interests are capable, not only in a personal but in a national sense, and it is not surprising, therefore, to find that the representative of her Britannic Majesty is exerting himself zealously to make the most of accusations which have been brought against the person who secured the concessions. It may be that Mitkiewicz is an adventurer, and that individually he cannot command the respect and prestige which are necessary adjuncts of success; but we are sure that the Chinese Minister will find it difficult to take reasonable exception to the American contractors who have signified their willingness to engage in the enterprise. To obtain such important advantages requires the spirit of adventure, and it is evident that good judgment prevails in the selection of the parties whom it is proposed to enlist in the work. But the affair has not been concluded, and it may happen that the effort to keep the management of the Chinese enterprises out of American hands will be successful. As a matter of national pride and interest we hope that no such result will follow; but for the benefit of the commercial world, and for the advantage of the Chinese themselves, we think that the extension of the telegraph and railway through China, no matter by whom conducted, is essential and of prime importance.

GREAT BRITAIN has designated a commission to confer with commissioners on the part of the United States upon the issues involved in the fisheries question. Mr. Chamberlain has been selected as one of the British representatives, probably in recognition of his political conversion and to strengthen the bond of his alliance with the existing government of the United Kingdom; the British Minister at Washington will be another member of the commission, while the third, yet to be named, will be a Canadian and reflect the policy of the Dominion authorities. As yet no one has been named on behalf of the United States. While the disposition of the American people is always of a peaceful character and there is a willingness to submit all international disputes to candid discussion and fair arbitrament, no sentiment which will yield to imperious demands or anything in the nature of what is termed "bluff" obtains. There is no urgency for the work of a commission, nor could the conclusions of such a body be effective or binding without powers conferred by law or enactments to give it force. What Congress may do remains to be seen; but it is not likely that anything in connection with the fisheries dispute will be hurried through the national legislature. The next Congress will begin in December, and it may be months thereafter before anything definite shall be concluded. There is certainly no reason for haste.

JAPAN, while selling the largest proportion of her products to the United States, still supplies her needs from other countries, ignoring to a great extent American goods, which are as useful as those of European manufacture. One of the reasons for this lies in the neglect of our merchants and manufacturers to avail themselves of opportunities for getting into contact with the buyers and in the indifference with which the Japanese trade seems to be regarded. It is not that our manufacturers will reject orders or fail to meet them if given, for they are always ready to accept trade; but there is no system or persistence in their methods. We have adverted to this frequently, and find occasion in some late statements made by Consul Jernigan to again refer to it. The consul takes up particularly the cotton-goods trade, remarking that the United States ought to share a larger proportion of this trade with Japan. A country producing every year more than one-half of the whole world's annual consumption should not remain satisfied with selling to Japan only 100,000 yards of cotton cloth. If the other countries on which Japan draws so largely every year for her supply of this staple can make it profitable, why cannot the United States compete successfully with them? The consul further expresses the belief that if the merchants and manufacturers of the United States desire to sell their cotton goods to Japan they can do so as successfully and as profitably as the merchants of any other nation, if they will go to Japan, survey properly the business field and study the peculiarities and wants of the Japanese.

THE difficulty which has arisen between the provincial authorities at Winnipeg, Manitoba, and the Dominion Government invites attention to that province. Manitoba was erected into a province by an act of the Canadian Parliament on July 15, 1870. By this act the boundaries of Manitoba are defined to be on the south the forty-ninth degree of latitude, on the north by 50° 30' latitude, on the west by the ninety-ninth parallel of W. longitude, and on the east by the ninety-sixth parallel of E. longitude. By the Canadian act 44 Vict., c. 14, these boundaries were extended, and the boundaries of the province were fixed at 49° to 53° N. latitude and 90° to 101° W. longitude. Manitoba was formerly known as the Red River settlement of the Hudson's Bay Company, and for some years the province could only be reached by



railway through United States territory, but in 1881 that portion of the Canadian Pacific Railway from Thunder Bay to Winnipeg was laid, and in 1886 the whole line was opened. In 1881 the people of Manitoba contracted to accept all of the constitutional disabilities under which the annexed territory labored. Among these was a clause which forbade the chartering or building of a railway within fifteen miles of the boundaries of the line of the Canadian Pacific Railway. The Manitobans now claim that the acceptance of these conditions did not apply to the old province, and that they have undoubted authority to build a road within the old territory. The Governor-General of Canada, however, taking a different view, refused a charter to the company which had undertaken to build a railroad from Winnipeg to the United States boundary at West Lynn. The people of the province are anxious to get into closer intercourse with the American Union and insist on having this railway, and here lies the trouble about which the leading London journals express such pessimistic views. If the interests of the province are to be considered this railway will certainly go through, but if the Dominion Government, reinforced by all of the power which the Imperial Government is able to give it, shall resort to coercive measures, the people of Manitoba must needs submit, or, declaring their independence, make formal protest and armed resistance against domination which does not consult the interests of the governed.

**R**EFERRING once more to the subject of our communications with Brazil, we find in a recent presentation of facts relating to commerce with that country some remarks by Consul-General Armstrong, at Rio, which bear out all that we have heretofore urged in behalf of means calculated to advance our trade in that direction. The Consul-General says: "The obstacles to a more rapid development of our commercial relations with Brazil are formidable, but they can, and no doubt will, be overcome, and, in my opinion, it is worth while to make them. The European dealers and manufacturers have at present largely the control and possession of the Brazilian market, and a thousand and one circumstances of which the outsider can form no adequate conception make it extremely difficult to contend successfully with this influence. One of the principal and most essential requisites for the development of trade between the United States and Brazil is rapid, frequent, punctual and cheap steam communication. 'Steamship lines,' say (truthfully, as far as my observation extends) Commissioners Thacher and Curtis in their final report, 'carrying goods and passengers at low rates from our ports are the talisman to the desired end. Without them efforts for increased trade are nearly all thrown away.'" He further remarks: "We cannot hope to build up trade with Brazil if we begin by loading it with unnecessary burdens. If we reflect that there arrive at Rio de Janeiro nearly every day steamers from Europe, it can readily be perceived that a monthly steamer from the United States cannot successfully compete with them. In trade time is often an essential consideration; hence orders will nearly always be given to those who can fill them most promptly. Since it is desirable, then, to render more frequent the communication between Brazil and the United States, it seems to me that we should endeavor to effect this in such manner as to confer the greatest benefit on all parts of the country. In the beginning both lines might receive the assistance of the government in the shape of a compensation for carrying the mails. Otherwise they will not be able to carry passengers and freight at the low rates that are absolutely essential to the rapid development of trade. Other nations have comprehended the importance of giving such assistance. England, between 1862 and 1885, paid no less than £4,500,000 for the conveyance of the mails between the ports of Great Britain and those of Central and South America. Germany has recently granted a subsidy to three

new lines of steamers intended to develop its commercial interests in foreign countries, paying 4,000,000 marks to the principal lines and 100,000 to the subsidiary line. The line of steamers between Antwerp and South America receives the minimum compensation of 250,000 frs. per annum. It is not only necessary that steamship lines receive some assistance, but that they may be able to count on it for a long and fixed period. No capitalist possessing common prudence (and this they usually possess in an eminent degree) will embark in any business unless he thinks he can see his way for many years ahead, especially in a business like this, which has to be built up gradually. After the two lines of steamers have been put on a sure footing every effort should be made to render them as useful as possible." Mr. Armstrong is presumably in sympathy with the administration, and yet his views, as expressed above, run counter to the opinions of the Postmaster-General, who, for reasons of his own, sees fit to antagonize measures calculated to carry out the practical ideas suggested by the Consul-General. This issue will be again brought to the attention of Congress, and it may be that there we shall find displayed a more liberal spirit in the appropriations calculated to foster and enlarge our export trade. Our foreign commerce ought not to be the football of politicians or made to hinge upon supposed political exigencies. It is certain that the public sense, irrespective of party affiliations, is strongly in favor of sustaining business prosperity by providing fit means for the disposal of our manufactured goods which are produced in excess of the needs of home consumption. Should the National Legislature decide to release a moiety of the surplus in the Treasury for the purpose of encouraging and maintaining our foreign trade connections and enlarging our markets, it should make the will of the people so pronounced that no one shall dare to obstruct or controvert its operation.

**I**N our May number we alluded to the Guiana frontier dispute between England and Venezuela. Further details relating to this difficulty have since been received. From these it appears that the English have taken possession of all of the territory up to Borna and Amacuro, thus depriving the Venezuelans of their exclusive dominion on the Orinoco River. The Venezuelan Government demanded that this territory should be evacuated, but the British Minister claimed that this action of his government was correct. It was answered that this was in violation of the treaty of 1850, which stipulates that neither party should exercise jurisdiction beyond Pomar, and that if, prior to the meeting of the boundary commissioners, matters were not placed on the same footing on which they stood in 1850 friendly relations would be interrupted and Venezuela would protest. No satisfactory answer being received, diplomatic intercourse terminated, the British Minister left Carácas and the German Minister resident there, at England's request, assumed the protection of British subjects and their property in the republic. After the British Minister had been given his passports British warships entered the port of La Guayra, and their presence was so menacing that an appeal was made to the American Government, and two of our ships were dispatched thither and the English vessels withdrew. The heavy interests involved in the disputed territory have induced the Venezuelan Government to make a supreme effort at settlement. This we hope will be attained. It is impossible for the United States to regard Great Britain or any European nation other than as an interloper in an attempt to extend the boundaries of their colonies or to make conquests on the American continent, and while the people of the United States are peace loving and deprecate war, it must be understood that they are willing and even anxious to sustain the principles of what is known as the Monroe doctrine, and to maintain the rights and liberties of all American countries.



## Communications.

### Commercial and Industrial Notes from Russia.

[FROM OUR SPECIAL CORRESPONDENT.]

WARSAW, August 15, 1887.

IN order to prove to the readers of your world-known journal how good a field Russia is for enterprise, I will give an account of the industries started by Director Seweryn Surowicz, a citizen of the United States. This gentleman, after leaving America, where he had embarked in divers undertakings, went to Paris to the International Exhibition (1878) as a representative of one of the leading engineering firms. There he made the acquaintance of Count Ludwik Krasinski, the well-known Polish philanthropist, who uses a great part of his wealth for the good of his country by starting industries and other institutions likely to become the means of ameliorating the condition of the laboring classes, and especially the peasantry.

Count Krasinski, being struck by the sharp intelligence and knowledge of your countryman, invited him to come to Warsaw in order to become director-in-chief of his industries. Mr. Surowicz willingly accepted this generous offer, the more so since it was always his wish to return to Poland, where his ancestors had lived. In 1879 he founded in Warsaw a new factory for making horn combs. At the beginning only Scotchmen were engaged to instruct the Polish hands in this branch, hitherto quite unknown in the country. All of the machinery also came from Scotland. In about a year the foreigners were dismissed, and from that date the foremen as well as the hands have been Poles.

The new factory soon became so prosperous that every year new branches were added and at the present moment a large new block of buildings is being erected. The Warsaw comb factory is the largest in Russia, producing daily above 500 dozen of staple goods in horn, besides finer qualities in tortoise-shell and mother-of-pearl. In Russia the comb industry has been carried on in a very primitive way, by far the greater part of the goods being produced by the peasantry from common Russian horn, and in those parts bordering on Siberia from the teeth of that antediluvian animal the mammoth. The Warsaw combs, being made from the best buffalo horns, find ready sale in all parts of the vast empire of the Czar and in Central Asia, Turkey, Roumania and Bulgaria, some exports even having been effected to the United States. The Warsaw comb factory employs at present about 300 hands, the steam-engine being of 50 indicated horse-power.

To Director Surowicz is also due the honor of having introduced another branch of rural home industry in this country, by which a few hundred poor peasants earn a good livelihood. The ancient Polish province, near the town of Ostrolenka, in the western part of the kingdom, has a very poor soil, and the peasantry (who, in order to make a living, work during the summer in the sugar factories and at brick-making) are unemployed during the winter, and one can meet these descendants of a people which once played a great part in Polish history going about the country in sandals and wearing long frock coats from homespun linen, asking for work and begging for bread. Count Krasinski, the president of the Polish branch of the Russian Society for the Promotion of Trade and Industries, thought of the best means how to ameliorate the wretched condition of this people. Mr. Surowicz proposed to introduce a mother-of-pearl industry, a branch which employs in Bohemia above 7,000 peasants. Last year classes were opened where peasants of both sexes were not only instructed free of charge how to make mother-of-pearl buttons, but even received a small sum during their instruction. As soon as they were able to work for themselves, turning-lathes were given them and all necessary tools, and at the present day some 300 families are employed at their homes in the pursuit of this useful industry, by which an adult can earn fifty kopeks a day and children about half the amount. All of the buttons thus produced are sent to the Warsaw works, where they receive the last finishing touch and polish, and after being sorted are supplied to the trade. The Polish mother-of-pearl buttons have already done a great deal of damage to Austrian imports and will certainly soon entirely supplant them. Mr. Surowicz, who has hitherto bought the shells from agents, intends soon to visit the mother-of-pearl fisheries at the borders of the Red Sea in order to buy the raw material

direct. Mr. Surowicz, on account of his great exertion in behalf of national industry, has been awarded a gold medal and a diploma of honor.

The above description is only to give to your readers an idea how much personal enterprise and perseverance can do in a country like Russia, where there is no overproduce. I know of a good many openings in different branches, where much larger returns on the capital invested could be realized than in almost any other country.

As it is the principal aim of your journal to find fresh outlets for the overproduce of your manufacturers, I beg to draw the attention of your sanitary engineers, owners of potteries, &c., to the fact that just at present Warsaw offers a rare chance for the sale of their goods. Under the personal direction of the celebrated Frankfort engineer, W. H. Lindley, there has been executed in this city a complete system of sewerage and water-works, at the cost of about 6,000,000 rubles. At another opportunity I shall be glad to give you full particulars about these most interesting works; at present I only wish to mention that not only the leading English firms—Doulton, Jennings and others—sell a good deal in Warsaw, where they have opened large warehouses, but also German and Austrian firms. I see, in fact, no reason why American firms could not profit by this opportunity to introduce their goods. In the first place, the following articles will be wanted: Drain-pipes, various sized sluice-valves, water meters, tip-up basins, water-closets, urinals, &c. In case your manufacturers wish to know whether they are able to compete successfully I shall be glad to give my opinion after the receipt of catalogues, kindly directed to the editor of this journal.

Finally, I wish to call attention to the fact that in November of this year there will be opened in Warsaw an exhibition of textile industries. I strongly advise American cotton planters to send samples of their cotton to Warsaw, for it is a well-known fact that Russian spinners wish to emancipate themselves from Bremen and Liverpool agents, and try to buy cotton in future, if possible, direct from the country where it is raised. Your textile-machine makers could also at this exhibition draw the attention of our mill-owners to their efficiency. As far as has come to my knowledge, no American machine has been employed as yet in Russian textile mills. As I am very anxious to serve your valuable journal to the best of my abilities, I shall also in this respect answer conscientiously all questions that may be addressed to me.

F.

### Philadelphia.

[CORRESPONDENCE OF THE MAIL.]

PHILADELPHIA, Pa., August 31, 1887.

THE increasing personal intercourse of Americans and Europeans is helping to broaden the foundation of our export trade. The overshadowing importance of our home trade, with its nearness and greater certainty, accounts to a large extent for the indifference manifested in regard to our export trade and its remote possibilities. Circumstances are driving us to pay more attention to what can be done abroad. Competition is narrowing profits, production is expanding in every direction, prices are remarkably firm, business is good and the fall and winter prospects could not be better.

There is confidence in all branches. The manufacturer, in whatever line engaged, does not stand in such dread of overproduction as he did a few years ago. Merchants great and small find demand steady and profits sufficient to enable them to keep their credit good.

Before this paper is in the hands of its readers Philadelphia will have celebrated the centennial of the signing of the Constitution of the United States. Great preparations are being made. The chief feature of the great parade will be the demonstration of the progress made in all of our industries during the past 100 years.

The industries of this city and of Eastern Pennsylvania are in an exceptionally prosperous condition. Skilled labor is in request; idle labor is unknown. Laborers generally are contented with the wages paid. Organization extends into almost every industry, but the feeling is conservative and not radical.

Wharton Barker, an individual banker of this city, has successfully established more friendly relations between this country and China, and that without the aid of the government or its agents. His scheme



contemplates the introduction of American methods into China. Banking will be established on a broad basis; manufacturing will be introduced; mining of all kinds of valuable and useful minerals will be conducted on a large scale. Men of brains and energy will have opportunities here for action. Mr. Barker has a strong syndicate back of him, and will soon enter upon the prosecution of a well-matured plan of action.

The export business of Philadelphia was never in a healthier condition than at present. New markets are constantly opening and new goods are being introduced successfully. Machinery is being shipped to markets never before open to Philadelphia manufacturers; cloth goods and textile manufactures of all kinds are finding new fields; pharmaceutical preparations from this city are meeting with increasing sales in new markets, and only for want of better maritime facilities this city would hold its own with any other in the world in the export of its manufactures.

Goodwin Brothers, 105 North Front street, have shipped several consignments of sugar-coated pop-corn to London, England, but, owing to the effect of salt air on these goods, the enterprise has not met with perfect success, having also to contend with the English prejudice against novelties.

Henry Altemus, 513 Cherry street, is very busy with orders. This house is specially engaged in the production of the Oxford Bible in family style, in which it is meeting with growing favor in the book trade. This bible contains about 20,000 marginal annotations, selected from the highest authorities on religious literature. The plates in this book were made in Oxford University and the proofs were read there, consequently the text can be relied on as conforming to the English standard.

Frismuth Brothers & Co., 151 North Third street, have lately made large shipments of fancy smoking tobacco to Yokohama, Japan, and have every prospect of a good and growing market there. They are making extensive shipments of the raw material to La Guayra, Pueblo and Capello, South America. In cut tobacco, both chewing and smoking, they are pushed to their fullest capacity, running night and day, in order to keep up with their most urgent orders.

Barrows, Savery & Co., Limited, south-east corner Front and Reed streets, are meeting with a demand for their specialty—steam-jacket kettles for soap boiling—from all parts of the world. They are constantly shipping goods to London for the manufacture of extracts of beef, lime-juice, &c. They have lately made a very heavy shipment of these kettles to Canada for culinary purposes; also to South America for beef extracts and fruit juices. These goods they also send all over the United States. They also do a heavy export business in wrought-iron field and grade rollers, which give great satisfaction wherever introduced. They have shipped several consignments to Liberia.

Morris & Co., Levant street, have sent numerous samples and some few consignments to various South American ports, and are anticipating the developments of good markets in that country.

Pancoast & Maule, 245 South Third street, are doing a large export business in American Union pipe couplings, sending large quantities to England and Germany. They are constantly shipping general assorted plumbers' supplies to Canada, Nova Scotia, New Brunswick, Prince Edward Island, as well as throughout the States.

N. B. Cox & Co., 414 Arch street, are doing an extensive business exporting kip, pebble and glove calf shoes of the higher grades. One of their best markets is Havana, Cuba.

C. F. Knapp, 510½ Arch street, who makes a specialty of fine extracts, writing and copying fluids, reports business good. These inks are making a good reputation for themselves throughout England and Canada, and a market for them has recently opened in Yokohama, Japan.

Thomas Potter, Sons & Co., 522 Arch street, are shipping light oil-cloths, for table and carriage purposes, to Viegas, Sola & Co., Havana. They have also made several shipments to E. De La Rue, city of Mexico. They are also doing a large trade with South America, the orders going chiefly from their New York house. All their shipments are made for cash.

James K. Fennell, 36 North Sixth street, is making a specialty of fancy wire goods, and has recently opened up quite a good market for his products in Canada.

Bullock & Crenshaw, 528 Arch street, are sending chemicals and

chemical apparatus for mining and general laboratory purposes to Mexico, Cuba, Canada and China. They are also making a specialty of missionary supplies for Syria and Palestine. The market in Mexico is constantly enlarging, owing to the extensive developments of the mining resources of that country by American capitalists, large supplies of chemicals being required for assaying purposes. They are shipping sugar-coated pills to South America in large quantities. They state that the chief obstacle in the way of developing a large trade with China and Japan is the difference in the rates of exchange, this giving Germany the advantage over this country.

Carey Brothers & Grevemeyer, 817 Market street, have lately established a trade with Mexico for wall-papers and general stationery goods. This house is doing a rapidly increasing business with Canada, South America, Mexico, Cuba and Central America, and the firm has recently shipped a very heavy order to Bluefield, Mosquito Reservation, Nicaragua.

Rommel, Rabe & Co., 835 Market street, are shipping their pharmaceutical preparations to various points throughout Canada, where they meet with ready sale and give perfect satisfaction.

E. Clinton & Co., 935 Market street, the brush manufacturers, have a good demand for their brushes, dusters, &c., in Mexico.

Henry Vehmeyers, southeast corner of Seventh and Market streets, is shipping combined desks and book-cases to Turkey, and is shipping orders to Porto Rico, Mexico, Canada and other countries.

Geo. Zorn & Co., 524 Market street, are shipping matches and clay pipes, cigarettes and cigarette tubes to Cuba. This firm has issued a very handsome circular and illustrated catalogue, which will be sent free on application.

The Pennsylvania Globe Gaslight Co., 47 and 49 North Second street, is sending its special line of lamps for lighting streets, parks, &c., to Para, to which place it has sent over 200 lamps. It is sending 300 lamps to Rio Janeiro, 100 lamps to Guadeloupe, N. M., also a gas-machine. It has sent two of its gas-machines to Paris, where they are working satisfactorily. It has also sent machines to England, and has yet to hear the first complaint of them. The market for this company's goods in Cuba and South America is said to be rapidly improving. It has one of its machines at work in a South American city, lighting thirteen or fourteen buildings. D.

### British Columbia.

CONSULATE OF THE UNITED STATES OF AMERICA.  
VICTORIA, BRITISH COLUMBIA, September 3, 1887.

*Editor American Mail and Export Journal:*

IT goes without saying that I receive with pleasure and read with edification your valuable periodical, and knowing that you are always pleased to have anything in aid of entire accuracy, I venture to make a slight amendment by way of correcting the inference (referring to the article in your August number on "Our Asiatic Trade, &c.") which may be deduced from the closing lines of the second paragraph, first column of page 45, that a consular agency had only recently been established at Vancouver, B. C. That post is within this consular district, which has been represented there since early last year, the Department of State having appointed an agent in March, 1886.

I first saw the barren hillside upon which the new town is built in 1885, a considerable saw-mill and one residence constituting all that there then was of Vancouver. On the 13th of June, 1886, it was a town of 2,000 population, and the next day there remained of buildings only the saw-mill and heaps of ashes. In the following September I visited Vancouver with General Sherman and it seemed again a thriving town. To-day it claims a population of 4,000. The assessed valuation of property is \$3,000,000. The town has many fine stores and pretty residences, one of which is not equaled by anything nearer than San Francisco. The Cunarders Abyssinia, Parthia, Port Augusta, &c., I have seen steaming away from its commodious levee through its almost land-locked harbor.

The commercial agent sent out in 1886 was a little ahead of time. He had been serving in Europe and the contrast was too great; he soon succumbed to *cnnui* and nostalgia. Vancouver has a metropolitan look. The anthracite from the mines at Banff, 125 tons per diem, will soon pass out of its port for Los Angeles and San Francisco.

ROBERT J. STEVENS.



## U. S. Ministers and Consuls.

### Irrigation in Australia.

CONSUL GRIFFIN.

SEVERAL of the Australian governments have entered into agreements for the transfer of extensive tracts of land to various irrigation companies.

The South Australian Government has recently perfected arrangements with the Chaffey Brothers, who have considerable experience with irrigation in California, by which the firm may acquire 250,000 acres of land in that colony. The firm is to have 30,000 acres at once upon the condition that it will during the first five years spend the sum of \$175,000, during the second five years \$700,000, during the third five years \$375,000, and during the fourth five years \$250,000, or a total of \$1,500,000. On spending \$5 per acre on the land, inclusive of the first 30,000 acres, the irrigationists may acquire the fee-simple up to 50,000 acres. This will leave 200,000 acres. When the Messrs. Chaffey have expended \$5 per acre upon this area they may purchase it for another \$5 per acre, so that altogether it will cost them \$3,000,000 to gain the fee-simple of the whole block of 250,000 acres. It is further agreed that all the machinery and pipes shall be manufactured in the colony, unless the government should determine to send abroad for them.

The Government of Victoria has also concluded an agreement with the same firm, by which the Chaffey Brothers are to have 50,000 acres in what is known as the Malley country, on the Lower Murray frontage, eleven miles east from the junction of the Darling, with the right of purchasing 200,000 acres hereafter. The fee simple of the land was valued by the Surveyor-General at 60 cents to \$1.21 per acre, but the highest rental ever offered for it was 2 cents for every 14 acres.

The Messrs. Chaffey undertake in this agreement to expend the sum of \$1,500,000 within twenty years upon 47,000 acres in constructing irrigation works and for building an agricultural college. The land when cleared for settlement is to be cut up in small blocks of not more than 80 acres, if planted and prepared for fruit-growing, and not more than 160 acres if for other products, each to be farmed separately, and no person to be allowed to purchase more than one block. As soon as 100 families are settled there the college is to be opened, in which chemistry, horticulture and the principles of agriculture, &c., are to be taught. If the additional 200,000 acres are taken up the sum of \$2,100,000 is to be spent in improvement upon 235,000 acres of Malley land, and the sum of \$2,100,000 paid to the government.

This agreement met with vehement opposition in the colonial parliament, but after a series of protracted debates it was finally agreed that Chaffey Brothers should enter upon the occupation of their land.

### Agriculture in Baden.

CONSUL MONAGHAN.

COMBINATIONS of farmers have been made in many villages for the purpose of buying and using in common machines and implements of the latest and most approved make, such as harrows, seed-cleaning, thrashing, mowing, raking and bundling machines, fruit-driers, &c. Then again the farmers have united in districts to buy seeds in large quantities, getting them at reduced prices and saving much on the cost of transportation. The seed are afterward divided in the presence of all, each man getting a share proportioned to the amount of money subscribed. Artificial manure, feed and fodder, when needed, are often purchased in the same way. Thus far the system seems to be working admirably. The most important union of the farmers, perhaps, is one organized for mutual protection against middlemen and to realize the utmost possible for their goods. This is especially true of growers of hops, tobacco and things destined for commerce. Everywhere one finds little banks, called credit-unions, in which the farmers themselves hold all the shares. Very often the village mayor will be the president, and the village treasurer the cashier and treasurer combined, of these little monetary centres. If a farmer wishes to build or buy land, but lacks the money to begin with, upon finding and giving good security he gets the money at the bank and builds. He never gets more than half of the amount required as security; thus, should principal and bondsman fail, the loss

to the union is small and to each member a trifle. Then there are all manner of insurance companies, in which losses by fire, hail or the elements can be fully covered.

The presence of labor-saving machines soon works a revolution in a village: labor of wife and children, now turned from the heavy and exhausting toil, finds play in a greater care of garden and vegetables, increasing quality and quantity, and hence very materially the annual profits. In this way a dozen small farmers enjoy all or even better results from the new machines than the big farmers, who at one time threatened to drive the little ones out of the field entirely. The good result from buying and using good labor-saving machines and from getting large quantities of seed, artificial manure and feed, from looking more closely after their sales, have passed a calculable figure; for besides the mere monetary value they have been productive of many intellectual and social blessings, affording time to the farmer and his family for attending the meetings, for reading and for social intercourse.

The work of the government in stimulating and encouraging the farmers has been for the most part general, as it needs must be; but its delegated representatives and agents have worked with an enthusiasm and energy that have been absolutely contagious, the result being a most enthusiastic co-operation on the part of the people. That the work of the government has been well applied; that their books, papers, pamphlets and lectures have produced excellent results; that the premiums granted have been deserved is everywhere proven by the fact that, among all the states of the empire, Baden receives and deserves her well-earned title, "The Paradise of Germany."

### The Native Sheep of South America.

CONSUL BAKER.

IS it not strange in a country like the Argentine Republic, the mountain slopes and fastnesses of whose interior provinces and territories are the native homes of several species of wool-producing animals of the very first order, that these animals should be almost entirely neglected, and the attention of those engaged in pastoral pursuits directed exclusively to the production of sheep whose stock was originally brought from Europe? On account of the admirable fitness of the pampas of the province of Buenos Ayres, both in respect to climate and natural grasses, for the raising of sheep, it is not surprising that that industry has in the last thirty years developed into such grand proportions, now furnishing nearly one-third of the wool clip of the world. But in the upper and especially the Andine provinces, and in Patagonia, where there is a scarcity of nutritious grasses, thus rendering those regions, in the absence of cultivated crops, less capable of sustaining that "latest production of art," the modern sheep, it has seemed to me an inexcusable want of enterprise on the part of the people not to rear and propagate, for the wool or hair, the great flocks of native breeds that roamed the wilds of those parts of South America long before the Spanish merino had found its way to this country, and whose fleeces were so wonderfully utilized by the Incas of Peru in the manufacture of textile fabrics.

At the time that the Spaniards first visited South America there were no animals in the country which exactly corresponded to the sheep of Europe; but they found in Peru and in the regions of the Andes several species of animals to which they gave the name of "native sheep" (*carneros de la tierra*), but which the aborigines called the llama, the alpaca, the guanaco and the vicuña. The two first-named varieties were even then nowhere to be seen in a wild state, but were domestic animals in the service of the natives, just as are our own modern sheep; and history gives no account of how the people came by them or where they originally came from. They used the llamas as beasts of burden, and they raised the alpacas especially for their fleeces, rarely using them for carrying purposes. The other two varieties, the guanaco and the vicuña, were then, as they are still, always found in a wild state, and were seldom domesticated.

While there is a general similarity between these several classes, yet each one seems to form a distinct genus. They all, however, appear to be a species of animal between the sheep and the camel, since they have many points in common with both. At the same time the genus is as distinct as that of the horse and the ass; though, like those animals, they also can be crossed, which is also the case with the camel



and the dromedary, the sheep and the goat, and the wolf and the dog, none of these different species directly indicating that they originally descended from the same type. The llama and the alpaca are of various colors, and sometimes speckled. The guanaco and the vicuña are generally of a single color—brown, approaching to red. The llama and the alpaca are so resigned to their state of domesticity that they are scarcely able to take care of themselves or live in a wild state. The guanaco and the vicuña prefer the wild state, but they are very susceptible of being domesticated. The Jesuits, who established their missions in this part of South America very shortly after its discovery, were the first to tame and domesticate the two latter animals, and the first also who undertook to cross them, which they did for the peculiar wool which the cross produced.

Although these animals are all indigenous to the Cordilleras of the Andes, none of them are found north of Ecuador, neither in Quito, Bogota, nor Caracas, where the climate is quite analogous to that of Peru or the Argentine Republic. The guanacos are especially found in the extreme southwestern portions of the province of Buenos Ayres and in the desert ranges of Patagonia as far south as the Straits of Magellan. There they are the principal food of the Indians, their skins being used for clothing and for coverings for their wigwams (*toldos*). The Chilians and the American Indians also have an animal, which they call the *chilihueque*, which is supposed to be the alpaca of Peru, modified by the climate, and which they formerly used as a beast of burden, but the use of which has in a great measure been superseded by the introduction of mules.

#### THE LLAMA.

Of these several varieties of native sheep the largest and strongest is the llama (*Camelus llama*). It was especially esteemed by the native inhabitants as a beast of burden. Its load is about 100 pounds, although for short distances it is able to carry considerably more. Its height is from four to five feet, and the length of its body is about the same. It has a neck resembling somewhat that of the camel, and it carries its head in the same manner, thus making it look taller than it really is. It has no horns nor hump. Its hoofs are cloven, and it ruminates or chews its cud. Its eyes are large and long, very black and prominent, but with a most soft and gentle expression. Its nostrils are wide and high. Its upper lip is divided like that of the camel, and it shows its teeth when it eats; its lower lip hangs slightly. In its upper jaw it has neither incisor nor canine teeth, but in the lower one it has six incisors and two canines; it has five molar teeth on each side of both jaws. When it walks it carries its ears forward like a horse that is frightened; when it is lying down they fall backward; its ears are sharp pointed and about four inches long, and are fringed with white hair. Its neck is from two to two and a half feet long, slightly curved, and with a graceful movement very much like that of the swan. Its body is shaped quite like that of the deer, with clean, slender legs, its cloven hoofs ending in talons or claws like those of a bird of prey. Under its breast, over the sternum, there is a hard, callous substance about six inches long and three inches wide, on which it sleeps or rests. When it wishes to lie down it doubles its feet under its body and falls on this callous substance with a sensible noise, very much as the camel does, from which circumstance some argue that nature intended the animal for a beast of burden. Its tail is from eight to ten inches long and very woolly. The llama is covered with a very fine silky hair or wool, which is not shed, like that of the camel, but when properly cared for grows to a length of from three to four inches. The finest is on its legs. On the body the wool is of various colors, but under the belly it is always white. It neither has the dirt nor the grease which the fleece of a sheep possesses, and though it is not so esteemed as that of the alpaca, that portion which is taken from the loins fully rivals it in silkiness and softness. The animal rarely produces more than one young at a time, the period of gestation being six months, and it comes to maturity at three years of age. When it is angry it spits an acrid matter, and can thus project it to a considerable distance; but it does not bite.

#### THE ALPACA.

The size of the alpaca (*Camelus alpaca*) is a little less than that of the llama, its height being about four feet, the length of its body being the same. Its neck is neither so long nor so delicate, nor does it possess the noble presence of the llama, though it is not an uninteresting animal. The appearance of its body when the fleece has been re-

moved is very similar to that of the llama. Like it, the upper lip is divided, and it shows its teeth when it eats, as also its gums, which are as black as ebony. Its head looks more like that of the sheep, except that it always keeps its ears pointed forward. Its nose, however, is black, like that of the llama, but is not so long nor so sharp pointed, nor are its nostrils so dilated nor so high up. Its hind legs are shorter than its fore ones and are somewhat curved. Its hoofs are cloven, but the claws are very small. It also has a callous spot on its breast, but it is small. Its tail is very bushy. It is a ruminating animal, but it does not possess the habit of spitting when it is enraged. It has large, expressive black eyes, and its disposition is very gentle and friendly, but it makes no outward demonstrations of joy. It drinks very little, but has a voracious appetite. When used as a beast of burden it is capable of carrying from seventy-five to a hundred pounds, but not on long journeys. It is on account of its fleece that the alpaca is most esteemed, and this makes it the most valuable of the South American native sheep. The wool is long, soft and abundant, being double the amount which the other varieties afford. On its sides, breast and back its fleece is from eight to sixteen inches long. It is of various colors and sometimes speckled. Outside of the wool, and somewhat protecting it, is a long hair, which is exceedingly fine, so that the fleece is really a combination of hair and wool. It is sheared by the Indians twice a year—in June and December.

#### THE GUANACO.

The guanaco (*Camelus guanacus*) is three and a half to four feet in length by about four and a half feet in height. Except in a few rare cases it is always found in the wild state. When young it is, however, very easily tamed; when old it is impossible. It is always of the same color, a brownish red. In its general appearance it resembles the llama, the most notable differences being a greater curvature of the back, a more shaggy fleece and smaller feet. Its head is more oval and not so large. It also lacks the callous spot on its breast, and its nostrils are small. Its upper lip is split and it has the teeth of the llama, and, like it, it has the habit of spitting. Its disposition and habits, however, are very different, and show that the guanaco is of a different race. There is no European animal which so much resembles it as the greyhound, and, like it, its legs always seem to be too long for its body. The guanaco is the fleetest animal which South America produces, and is so courageous that when surrounded by the hunters it will turn upon them and trample them under foot in its efforts to escape. It is gregarious, and it is generally seen in droves or flocks of from two to three hundred. They are vigilant and exceedingly circumspect in their movements, and when feeding place one of their number as a sentinel to announce the arrival of an enemy. The flocks which are now to be seen on the frontiers have generally a very large excess of males, for the reason that being stronger and swifter of foot than the females, and perhaps lacking their curiosity, which induces the latter to approach too near to a point of danger, they more readily escape the toils of the hunters.

#### THE VICUÑA.

The vicuña (*Camelus vicuña*, Linné) is the smallest and most delicately formed of any of the native sheep, but its wool is the finest, and on that account it is the most interesting and highly prized. Its height is only about three and a half feet and its length two and a half, and its body is much lighter. It only weighs from 75 to 100 pounds, while the llama weighs 250. In its general form and appearance, however, it corresponds to the other varieties. Its head seems large for the size of its body and is more oval, but it runs almost to a point, its snout being quite sharp, thus making its upper lip (which is divided) and its mouth very small. Its head, however, is erect, and is covered with wool of a reddish color, which is also the color of the fleece. Its nostrils and teeth are also small, and its upper gums are black. Its ears are sharp pointed and stand erect, and its neck, where it joins the body, forms quite a depression. It has no callous spot on its breast. Its legs are delicate and seem very long, compared with the size of its body. Its feet are small. Its wool is the finest, the softest and the most silky that is known, and when it has been cleared of the hair which grows with it it is regarded as the most valuable in the world. The wool on the back is without any mixture of hair, while on the rest of the body it is even longer than the wool, thus somewhat protecting it. The wool on the belly is white.

The vicuña does not possess the gracefulness of the other classes of



native sheep. It lacks the majestic appearance of the llama, the soft and expressive look of the alpaca, or the independent and lively carriage of the guanaco. Its eyes are black, but without expression, rather round than oblong, and as the pupil occupies all the iris it gives it a vacant look. It ruminates, but drinks very little water. It is gregarious and inhabits the snowy peaks of the Andes, and the flocks are frequently mixed with those of the guanaco. They are very timid and difficult to secure. It is calculated, however, that 250,000 vicuñas are still annually hunted down.

#### EXPORTS OF WOOL.

Not a great quantity of the wool of any of these animals is shipped from the country; the exact amount, however, cannot be known, for the reason that the exports of wool are not classified by the authorities. The greater portion is consumed in the country. It is used by the inhabitants of the interior in the manufacture of yarns, threads, and a variety of woollen textiles. They display a wonderful skill, without the usual appliances of the art, in the making of shawls, ponchos, rugs, &c. Some of these fabrics are a marvel to all who examine them. By separating the filaments of different tints of the vicuña wool, and making threads of them with the spindle, they are enabled, by means of a common hand-loom, to weave a cloth which, aside from the striking arrangement of its colors, is far superior in closeness of texture to the best woollens of commerce. The best of these native fabrics are made in Catamarca and some of the other upper provinces, but not in quantities to meet the demand. The principal merit of these native ponchos, shawls, &c., is that they are entirely impervious to water, at the same time that they are light and fine; and they readily command exorbitant prices, ranging from one to five hundred dollars, gold, according to their finish, thus quite rivaling the camel's-hair shawls. To make them, however, is the work of many months of exacting, hard labor. As the hunting of the vicuñas is somewhat difficult, and they are becoming somewhat scarce on account of the recklessness with which they are slaughtered, the price must soon go even beyond these figures.

#### DOMESTICATION.

In regard to the domestication of these animals and the refining and improving of their fleeces by a proper system of breeding, there seems to be no question. So far as the llama and the alpaca are concerned, the ease with which they are domesticated is historical. When the Spanish invaders conquered the country they found both of these animals in the service of the natives, either employed as beasts of burden or carefully attended under the direction of shepherds for the fleeces which they furnished. They are still to be seen domesticated in flocks through Peru, Bolivia and some of the Andine provinces of the Argentine Republic, cared for and folded just as the European variety is here. It is true, however, that they have been greatly superseded as beasts of burden by the mule and as wool-producing animals by the modern sheep. No particular pains have ever been taken to domesticate the guanaco and the vicuña, but the efforts of the early Jesuits in this line prove the easy success with which it can be done. The ancient Peruvians do not seem to have tamed them, but, although they roamed in a wild state, it was not permitted to kill them, except under certain conditions; but in the proper season the great flocks which were found in the mountain passes were surrounded, carefully captured, sheared, and then allowed to go free again.

Whether these animals would bear a transfer to other countries, where they might be better appreciated, is a question which does not appear to be fully settled. I believe, however, that through the efforts of naturalists they are now to be found in some of the parks and zoological gardens of the large cities of Europe and the United States, though in those places they are only kept for show. This, however, would seem to prove that they can be acclimatized.

### CONSULAR NOTES.

#### German Paper Making.

Among all European states Germany possesses by far the greatest number of paper mills, viz., 809, against 420 in France, 361 in Great Britain, 228 in Italy, and 220 in Austria-Hungary. The exportation of paper and paper articles (except pasteboard) shows a steady increase. Nearly all other branches complain of depression in business and unprofitable prices, so that only large manufacturers, with abundant funds at their command, are able to keep up business to the

exclusion of the smaller manufacturers who are unable to stand competition.—*Consul-General Raine.*

#### Germany's Exports to Spain.

As under the new consular convention just ratified between Germany and Spain their reciprocal relations deserve notice, I give an extract from a report of the British consul at Madrid as to German imports. He reports that the export in 1884 reached an extent twenty-six times larger than it was in 1885, that the Spaniards complain frequently of the shoddy quality of German goods; nevertheless the German traveler gained the precedence over his French and English rivals. The former understood the Spanish language and got, therefore, great advantage over those who must offer their services through an interpreter or simply produce their price-lists. In Malaga, the consul states, exists a colony of young Germans, who there acquire the Spanish language and study the tastes of the people.—*Consul-General Raine.*

#### Belgian Coal Mines.

The principal coal-producing district in the kingdom is Hainaut (in this consular district). In 1885 the production was 12,925,815 tons (of 2,200 pounds), a decrease of 585,181 tons as compared with 1884. In 1885, 57,662 laborers were employed in the mines, a decrease of 2,359 from 1884. The average selling price per ton of coal during the year 1885 was \$1.71, being 14 cents less than in 1884. Since 1853 the price has not been as low as during 1885. The cost of production was \$1.63 per ton, a reduction of 15 cents per ton from 1884, being 11 cents on the cost of labor and 4 cents on other expenses. This is the lowest cost price since 1853. The profits of the remunerative mines have decreased (from 1884) \$16,103.06, while the deficits of the losing mines have decreased \$174,099.34. The estimated profit per ton was 8½ cents in 1885, or 1½ cents more than in 1884.—*Consul Slade.*

#### Competition of Austrian With American Export Trade.

The export trade of Austria to markets where a competition with American exporters would be encountered is as yet very limited. Few Austrian manufactures find their way to the Central and South American states, or to Havana, China, or Japan, and these are mostly the same articles which Austria exports to the United States, viz.: Vienna specialties and novelties, Bohemian and Vienna export beers, Hungarian wines and furniture. And none of the Austrian manufactures, it appears, are shipped directly, but by way of Hamburg and London, and enter the foreign markets under French and English labels, very much to the annoyance of Austrian manufacturers and consuls, who are clamoring for a direct communication. As to the articles of furniture, it is to be hoped the time will come when it will seem absurd and unprofitable to export chairs, bureaux, tables, looking-glasses, book-cases, étagères, &c., from Austria to the Havana and to the Central and South American states.—*Consul-General Jussé.*

#### Protection in Germany.

In the recent debates of the German Reichstag on the enactment of the German-Spanish treaty of commerce, in which the Liberal party attempted to make the protective policy of the government, adopted since 1879, responsible for the decline of trade in 1884 and 1885, the representative, in response, pointed to the fact that the chief articles of export in Germany, such as cattle, sugar, spirits and iron, had extraordinarily receded in price.

Suppose [he demonstrated] we underlay to our export returns of 1885 the prices of the most favorable year of the so-called "free trade" period (prior to 1879), we would arrive at a figure of four milliards of mark for exports in 1885, a figure which cannot be shown by any single year of the free-trade period.

He continued to argue that it was altogether due to the increased export within the last years, chiefly to America, that Germany succeeded in getting back from abroad those 600,000,000 marks in gold which, owing to its former unfavorable commercial balance, had left the country. As a "reliable barometer," as a "mathematical proof of the nature of Germany's foreign relations," he mentioned the rates of exchange for bills, which for two years past had been in favor of Germany. Gold on hand continued to increase, coming in from abroad. Two factors regulated commerce with foreign nations—balance between imports and exports of goods, and credit and debit of public securities (stocks and bonds).—*Consul-General Raine.*



## Foreign Notes.

### Argentine Republic.

Lassenberg & Co. report from Buenos Ayres about wool, under date July 15, a dull trade, sales not exceeding 500 bales, while the receipts amounted to only 300, leaving the stock 24,500. Total export to date, 245,800 bales, against 265,000 last year. Dry Hides—During the fortnight some 30,000 changed hands, 10,000 of which for the United States, on the basis of \$3.20 gold for 23-lb. classified provincial. Including Rio Grande, the slaughterings of cattle had reached 1,241,100 head, against 1,581,100 middle of July, 1886. Horsehair was firmer at \$6.20 to \$7.10 for southern, and \$5.50 to \$6.30 for northern; hair from the rivers, \$4.50 to \$5.20 washed cow-tails, \$8.

### Brazil.

Borstelmann & Co. write from Pernambuco about sugar crop prospects under date July 27: The weather has been singularly propitious the present month. A big crop is in prospect unless planters prefer to let part of their canes rot where they are, prices being so low that they do not cover the cost of production. Early in September new sugars will begin to be marketed. Sales during the month reached 27,000 bags, on the basis of 1,200 to 1,350 reis for good Americanos, equal to 11s. to 11s. 3d. per cwt., freight, insurance and commission. Exchange, 22½d. There was a revival in the sugar trade at Bahia on July 26, some 20,500 bags being taken at 1,100 reis No. 7, equal to 9s. 6d. per cwt., cost and freight. Exchange, 22½d. The stock was exhausted and the campaign had virtually terminated. Cocoa prices were drooping after a sale of 2,000 bags at 7,350 to 7,200 reis per arroba, equal to 60s. 2d. to 50s. 2d. per cwt., with freight. There were buyers at 6,800 to 6,850 reis, which would equal 32s. 10d. Of rosewood some 10,000 arrobes had been received, for which 800 reis was asked. Redwood was declining, 70,000 arrobes being in the market at 500 to 400 reis, equal to £5 5s. 10d. to £4 19s. 5d. per ton.

O Comercio, Para, has the following about india-rubber, dated August 1: During the week the india-rubber market has been firm at 2,450 reis the kilogram for fine and 1,550 coarse. Amazonas rubber may be had for 1,200. The export from Para during the fiscal year ended June 30 last has been: India-rubber, 11,641 tons, worth 28,593,054 milreis; cocoa, 3,621 tons, worth 2,235,096 milreis, and Brazil nuts, 74,150 hectolitres, worth 634,949 milreis; other goods, 127,438—total export, 31,501,438 milreis. The customs collected 9,727,172 milreis duties. Exchange, 22½d.

### Burmah.

Bullock Brothers & Co., Rangoon, August 13, report the rice movement to date as under:

	Shipments To Europe.	To Other Countries.	Load'g for Europe.	For Other Countries.
	1887. 1886.	1887. 1886.	1887. 1886.	1887. 1886.
From Rangoon..tons.	315,550 288,410	164,900 13,000	2,140 2,000	
Akyab .....	164,000 116,250	32,100 .....	.....	.....
Bassein .....	112,400 154,250	200 .....	.....	.....
Moulmain .....	39,600 45,430	2,000 .....	.....	.....
Totals .....	631,800 604,340	209,200 15,000	2,140 2,000	

Cutch shipments at the same date amounted to 9,530 tons, against 8,370 in 1886; to Europe, 4,630 tons, against 5,160. Teak-wood shipments, 92,000 tons from Rangoon, against 83,000, of which to Europe 15,000, against 16,350.

### Ecuador.

Reyre Brothers & Co. report, under date August 16, from Guayaquil, relating to cocoa: Receipts during the fore part of August were 22,000 quintals, making, with 38,000 in July, altogether 255,000 quintals to date from January 1. Machala gave way in consequence to \$17.50. The receipts from January 1 to July 15 having been 215,000 quintals and the shipments 187,000, the stock then left was 28,000. Stocks in Europe August 1 were: At Havre, 49,500 bags; at Nantes, 19,000; at Bordeaux, 18,500; at London, 72,000; at Liverpool, 8,000, and at Hamburg, 22,000; total cocoa stock in Europe, 189,000 bags. Ivory nuts have gone on declining and are now quoted \$3.50 per quintal, which equals 12s. per cwt., free on board. Total shipments from January 1 to August 1, 105,039 quintals, against 111,754 last year, 90,200 in 1885 and 54,905 in 1884. Exchange on New York, three days' sight, 41 per cent. discount.

### France.

The *Journal des Fabricants de Sucre* of August 22 expresses itself about the general sugar situation to the following effect: Without venturing to prophesy as to the future course of prices, which under existing speculative influences have become more or less a matter of guesswork, it is well to keep in view the alteration in the statistics of the article, which show such a steady and material reduction in the visible supplies. The momentary decline which took place was caused principally by more favorable weather reports from the beet-root districts, where some rain has fallen, though rather irregularly and generally not in sufficient quantity. Reports under this head, however, are rather contradictory; in Germany, for instance, the leaves are already rather large and continued rains might not do so much good to the roots as expected, but in France and Belgium a great deal of rain seems to be wanted just now. Altogether, only the first sowings look fairly well, and generally speaking the roots are in a backward state, rather small, and will require specially favorable weather to make a large crop. Meanwhile the break-up of the drought in France, although coming somewhat late, will

no doubt have a beneficial effect on the prospects of the crop. In Austria and Germany since rainfall set in prospects are improving, but it will require suitable weather to bring the yield per acre even to last year's. The agitation against the present system of bounties seems likely to assume larger proportions.

The hurricane of the middle of August ravaged a good many vineyards in the Bordelais wine district, but the damage done will not materially affect the general outlook, which is favorable in France both as regards quantity and quality of the coming crop. While French wines remain rather steady at Bordeaux and Cette, foreign were weak, even at the low prices they are now selling at.

Advices from Lyons, dated August 23, state that the raw-silk market was looking up, with an advance of 1 fr. per kilogram for the week, the silk trade coming to the conclusion that this year's silk yield in Europe and Asia will not exceed last year's, while stocks are much reduced, and the consumption of silk has materially increased.

### Germany.

The general revival in the iron and steel trades in Rhenish Westphalia, Siegen and Upper Silesia has been making steady headway in all the month of August. The various syndicates formed have been working harmoniously together, as at the same time the domestic demand was on the increase and orders came dropping in again from the United States for spiegel, billets and wire rods, the upward tendency developed more vigorously, the more so as stocks were moderate, reduced in the hands of dealers, and there was a rush on the part of the latter to replenish supplies.

Great excitement has been caused in banking circles by a gigantic project to form a so-called spirit trust, that is, form a private monopoly of the spirit trade through a coalition with distillers and rectifiers. Half a dozen leading banking firms were gained over in favor of the plan, but from the very commencement the Mendelssohns and Bleichroders of Berlin kept aloof, and so did the Nordhausen and Silesian distillers, while it became doubtful whether the Bavarian and Wurtemberg distillers could be persuaded to join. Out of 3,000 distilleries 1,950 had nevertheless declared their readiness to adhere to the coalition. The proposed capital in shares had, from 20,000,000 marks at first proposed, been advanced to the figure of 60,000,000 marks, and the promoters persevered during about three weeks of August, when it was finally concluded to drop the idea, at least for the present. Public opinion and the Liberal press were, moreover, hostile to the movement, and spirit, which had risen considerably in anticipation, thereupon declined to July rates. One of the main objects alleged in favor of the plan was to push the exportation of spirits and—we presume through bounties—undersell foreign rectified abroad.

Vintage prospects are fair on the banks of the Rhine and in other wine-growing districts, the weather having singularly favored the vines this year, and there being less vine disease than is usually the case. A fairly abundant yield is expected, coupled with good quality, barring accidents that may still occur till the crop is secured.

### Greece.

Basilio D. Cremidi writes under date August 10 with reference to currants from Patras: Since the 28th ult. there has been rainfall at Calamata, Coroni, Pylos and Ligustida precisely at the inopportune moment when currants were still spread out in the open air. Up to date only 200 tons provincial currants made their appearance at this point. At Calamata the steamer Dauno is loading for Marseilles, and the Demerara was to leave thence for Liverpool to-day; the latter steamer will therefore arrive a week ahead of all others, and as for shipments hence they will commence in a couple of days. Since the first purchases made at Calamata there has been a decline in spite of a higher exchange, and currants can now be placed on board at 38.50 frs.

### Holland.

The *Nederlandsche Courant*, in its monthly coffee review of the last week in August, remarks that the market in Holland since the break in June has been extremely sensitive, consumers holding back and thus disconcerting renaissance speculation for a rise. The Java short crop nevertheless keeps up an undercurrent of strength and confidence. Following are the official coffee statistics:

#### ARRIVALS DURING THE FIRST SIX MONTHS.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	231,380	192,860	246,040	213,690	284,800	233,330
America.....	114,280	117,710	115,580	100,239	97,657	95,750
Totals.....	345,660	310,570	362,520	313,929	382,457	329,080

#### DELIVERIES.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	207,980	215,060	116,440	184,090	218,300	191,780
America.....	98,401	117,174	120,135	106,348	100,114	99,206
Totals.....	306,381	332,234	336,575	290,438	318,414	290,986

#### STOCKS JULY 1.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	135,200	151,050	179,550	190,450	189,000	158,400
America.....	37,104	34,225	33,292	33,350	21,696	22,125

Totals..... 172,304 185,275 212,842 223,800 210,696 180,525  
To which has to be added the amount of unsold coffee in the Netherland Trading Company's hands in bags of 134 pounds net.

1887.....	...bags.	243,240
1886.....		324,799
1885.....		616,965



## AMERICAN MOVEMENT.

	1887.	1886.	1885.	1884.	1883.	1882.
Arrivals for first six months.....	114,280	117,710	115,580	100,239	97,657	95,750
Consumption.....	98,233	116,925	120,042	106,260	93,321	94,365
Re-exports.....	168	249	93	88	6,793	4,841
Deliveries.....	98,401	117,174	120,035	106,348	100,114	99,206
Stock, July 1.....	37,104	34,225	33,292	33,350	21,696	22,125

## India.

Following are the wheat shipments made to Europe from January 1 to the middle of August, in hectolitres:

	To England.	To the Continent.	Total.
From Bombay.....	2,009,700	3,970,100	5,979,800
Kurrachee.....	255,200	72,500	327,700
Calcutta.....	2,047,400	414,700	2,462,100
Totals.....	4,312,300	4,457,300	8,769,600
Against 1886.....	4,158,450	5,528,850	10,112,300

Following is the indigo crop report from Calcutta, August 13: Production in Lower Bengal is so unsatisfactory that the estimate does not exceed 16,000 to 17,000 maunds. In Behar, on the contrary, the first cutting's yield will amount to something like 50,000 maunds. As for the second cutting, heavy rains are reported from various districts. The crop outlook is bright in Oude and Benares.

Jute was firmer at Calcutta on August 10. The crop outlook was satisfactory, but it will be marketed late. Good quality native, prime, was worth 24 rupees. New linseed was selling at 4.2 rupees, and rapeseed at 3.4.

## Java.

Advices to the last week in August have been received from Batavia. The government Billiton tin sale, August 31, averaged 61.75 guilders per picul. As for the government coffee crop of the island, the same is now estimated as not exceeding 377,230 piculs, against an actual yield last year of 816,932. From the 377,230 piculs 100,000 have to be deducted as set aside for sale at Batavia, leaving only 277,230 for Holland. Hence in 1888 the government sales in Holland will be smaller than they are known ever to have been before. At the same time the private coffee crop of Java is reduced to such an unprecedentedly small figure that the non-existence of the favorite blueish coffee this fall will be very much felt. Planters, seduced by the high figures ruling on the spot early in June, sold up to July 1 101,620 piculs. The next Padang coffee auctions will be held on September 20 and 21, to be followed by another auction on December 17. The coffee there offered will all be taken for American account.

## Philippine Islands.

Mail advices, dated August 1, relating to the American department of the Philippine sugar trade more particularly, state that since January 1 55,075 tons had sailed from Manila alone, against 72,405 for the same time last year. On August 13, 35,930 tons were afloat for the United States, against 40,245 tons same time last year.

On August 15 hemp was steady at Manila at £30 18s. 4d. per ton, free on board, the total receipts at all ports since January 1 having been 287,000 bales, of which England received 139,000, the United States 138,000 and other countries and local consumption 26,000. There were then loading for the United States 16,000 bales and for England 8,000. Sugar was easy at 9s. 5½d. for No. 9 Manila dry, free on board. Washed coffee was worth 103s. 2d. per cwt., free on board.

## Portugal.

*O Commercio*, of Oporto, of August 19, contains particulars of the wine shipments thence during July, when there were dispatched to Germany 145,310 litres; to Belgium, 7,022; to Brazil, 1,158,562; to the Argentine Republic, 36,234; to Denmark, 42,342; to the United States, 17,763; to France, 178,673; to Spain, 269; to Holland, 8,773; to England, 838,097; to Italy, 267; to parts in America not mentioned, 2,254; to Portuguese Africa, 1,750; and to Scandinavia, 29,237; together, 2,527,452 litres; against 2,715,231 during the corresponding month of last year. The vintage outlook is about all that could be wished for, and, after two years of an abundant wine crop, one probably not inferior in size and quality is drawing near. The popular red wines, now so much liked in France, Portugal will be able to spare the latter country to a notable amount.

## Spain.

Zimenez & Lamothe, writing from Malaga, August 1, express themselves concerning the raisin crop about as follows: The crop will be late, but not fall short of last year's. The fruit is well dried, plump and normal in size, so that the quality will leave nothing to be wished for, provided rains do not set in from now forward. Unless an early American speculative demand arises, prices are likely to open lower than last year's campaign. Almonds will only yield a reduced crop, owing to the extreme cold in winter, from which the trees suffered, but what there will be gathered will be good. Dry Figs—An average crop will be secured; the figs are deficient in size, but otherwise of good quality.

The vintage will be abundant, a few localities only excepted. Many proprietors are at a loss where to take the empty casks from to put their product in bodega, inasmuch as they have the major portion of the old crop still on hand and cannot sell for the want of buyers. They are ready to sacrifice these 1886 wines, but however low they may offer them nobody cares to saddle himself with the 1886

growth; hence the critical condition of the viticultural interests in a good many localities in the interior. In the ports the state of affairs is less strained, the holdings being light and always some export demand. Although Spain shipped this year to France and elsewhere as much wine as last year, a considerable stock is left inland, simply because the crop of 1886 was much larger than most proprietors had any idea of, and the 1887 yield bids fair to be as ample, if not more so.

At Bilbao a good demand prevails for iron ore, especially for the United States, which go extensively into the importation of ore from the North of Spain, steamers upon steamers leaving with large cargoes for New York. The government export statistics sum up the movement in the mineral branch as follows for the first five months:

	1885.	1886.	1887.
Calamine.....	17,114	16,522	14,129
Pyrrites.....	342,265	300,562	333,431
Iron ore.....	1,226,377	1,874,118	2,280,000
Precipitate.....	11,688	10,660	11,696
Quicksilver.....	667	501	777
Pig lead.....	51,235	46,977	56,051
Totals.....	1,640,346	2,249,540	2,697,084

## Straits Settlements.

Gilfillan, Wood & Co.'s (Singapore) report of June 29 reads as under: Black Pepper—Only 230 tons have been sold during the fortnight, supplies having proved smaller than was expected, and the price has advanced to \$22.20 per picul. There is a good demand both from the United States and Europe. White Pepper—A moderate business is reported at down to \$38 for 5 per cent. The new crop is beginning to arrive, but will not be plentiful for some weeks to come. Sago flour is very dull, and prices tend downward. Brunei is nominally worth \$1.90, and Sarawak \$2 per picul. Pearl Sago—There are sellers at \$2.40. Sales of fair extent have been made. Tapioca is unchanged in position and value. The demand is sufficient to take off all the supplies. Nutmegs—A few piculs of 110's have been sold at \$95, but there is now no stock. Mace—A few cases of mixed quality are offering at \$86 per picul. Cloves—A few piculs Amboyna have been sold at \$42 per picul. Gum Copal—There have been moderate sales at about last prices, and some stock still remains. Gum Damar—Poor quality Palembang brought \$26.

## Turkey.

The official raisin crop report, dated August 5, published at Smyrna, states that the quality promised well, unless it be interfered with by rains while drying. Red raisins will prove satisfactory. The yield will be about 25 per cent. below that of 1886, but it will be exceptionally abundant, nevertheless, last year's crop having been a monster harvest. The first new Yerlis were due August 15, and the first Yourlas August 31. The Sultana crop will also exceed all previous ones, prior to last year's. Prices are expected to open low; the quotation for the moment for 1886 fruit was within the range of 55 and 70 frs. as extremes the 100 kilograms, free on board. Small Black—The crop will fall 5 to 10 per cent. short of last year's, and will open early in September. Figs—The excessive heat has curtailed the crop 35 to 40 per cent., and the bulk will be small in size. Quality promises to be sound. First receipts were expected on August 12. The range of new, to arrive from September 12 to 30, was 62 to 88 frs. the 100 kilograms.

## Uruguay.

Following is the general report found in *El Comercio*, of Montevideo, dated July 22: During the fortnight under review business has become quieter almost daily. Dry hides were neglected; the only demand there was was for the United States, for which 29,600 were taken on the basis of \$6.10 for 21-pound hides, equal to 8½d. cost and freight. Matadero salted were being shipped on consignment in the absence of buyers. Wool was very quiet, sales not exceeding 50 bales, leaving on hand a stock of 200 bales. Sheepskins were dull, 100 bales having been sold on private terms, 200 bales shipped on consignment for owner's account, leaving the stock 335 bales. Horsehair was stagnant at nominally \$17, the stock left being 86 bales.

## West Indies.

CUBA.—Hidalgo & Co., Havana, gave exports to August 1 as 391,506 tons, and stock in the six ports 116,793 tons, total, 508,299 tons, against last year exports, 418,764, and stock, 174,845; total, 593,609 tons. These figures showed a minus of 85,310 tons in crop this year to August 1, which indicates only about 600,000 tons final crop, against present estimates of 625,000. The same firm wrote under date August 20: Stock at Havana and Matanzas, January 1, 15,572 tons; receipts since, 225,900; exports, 171,911; afloat, 491. Stock August 19, 69,070 tons, against 99,222 tons last year.

TRINIDAD.—E. P. Masson reports from Port of Spain, August 5, about sugar crop prospects. During the first few days of the fortnight under review rainy weather continued, but since then it has been dry and oppressively hot, and serious injury would result from it to the growing canes should it remain so for a couple of weeks more. Shipments since January 1 have amounted to 23,764 hogsheads, 10,484 tierces and 309,221 bags, against last year, same time, 20,517, 10,352 and 186,252 respectively. Cocoa—Receipts have fallen off even faster than was supposed would be the case, causing ordinary quality to remain firm at \$15.75 to \$16.25 the fanega. The new crop will not be an early one, as had hitherto been the impression; the bulk will not begin to be gathered before December, since in some localities blossoming has scarcely commenced. Shipments since January 1 amount to 51,805 bags, against 69,078 in 1886. Asphaltum is steady at \$9 boiled and \$3 crude. Export, 14,868 tons, against 19,789 in 1886. Exchange, 90 days' sight, \$4.83.



# Review of the Markets.

## Reports for the Month Ended September 1.

**Butter.**—The demand has been light, but prices are firm. We quote: Creamery, 17@25c.; dairy, 15@22c.; factory, 15@18c.

**Cheese.**—There has been a moderate demand and prices are unchanged. We quote: Factory, New York cheddar 11½@12c.; Western, flat, 9½@10½c.; creamery, New York, part skims, 8@10c.; full skims, 3@7c.

**Coffee.**—Trade in Rio grades has been moderate, the market closing strong but quiet, sales reported being on the basis of 20c. for No. 3. The monthly Rio coffee statement of William Scott's Sons is as follows:

Stock in warehouses August 1, 1887.....bags. 566,363  
Received since—  
At New York.....bags. 53,061

Total supply.....616,424  
Delivered from warehouses since—  
At New York.....bags. 142,517  
Baltimore.....15,954  
New Orleans.....7,680

Stock in warehouses September 1, 1887—  
At New York.....bags. 394,591  
Baltimore.....50,782  
New Orleans.....7,900

Total stock.....453,273  
Afloat and loading for United States to July.....none  
Purchased for United States to September 1 (59,000 bags Santos).....113,500

Total visible supply September 1, 1887.....bags. 566,773

The demand for all descriptions of mild coffees has been moderate, but the market is firm and full prices are being obtained. Padang is quoted at 23½@24½c., but no sales are reported. Maracaibo is held firmly at 20c. We quote: Rio, ordinary cargoes, per pound, 19½c.; fair do., 20c.; good do., 20½c.; prime do., 20¾c. Santos, fair to good cargoes, 20@20½c.; Java, 21@21½c.; Singapore, —@—c.; Ceylon, 22@23c.; Maracaibo, 19½@20½c.; La Guayra, 18@20½c.; Jamaica, 17½@19½c.; San Domingo, —@—c.; Porto Rico, —@—c.; Central America, 18@20½c.; Mexican, 18@20c.; Angostura, —@—c.; Savanilla, 18½@21c.; Mocha, 24@25½c.

**Cotton.**—"Spot" has ruled quiet but firm, middling closing at 10½@10¾c. In options the movement has been slow, although better prices have been realized. Closing quotations were: September, 9.36@9.37c.; October, 9.25@9.26c.; November, 9.20@9.21c.; December, 9.20@9.21c.; January, 9.24@9.25c.; February, 9.31@9.32c.; March, 9.38@9.39c.; April, 9.46@9.47c.; May, 9.53@9.54c.; June, 9.59@9.60c.; July, 9.65@9.66c.

**Dry Goods.**—There has been a large trade transacted, but it has been chiefly in jobbing branches. Manufactures of wool are in uneven demand. Overcoatings are in steady delivery, and where deliveries have been completed the new request is of moderate proportions. Cheviots have considerable attention, flannels have been in wider request, while blankets are in steady delivery in the execution of orders. Fancy knit woollens are more quiet, while stockinets, cloakings and jersey cloths are in improved request. In cotton goods a large and satisfactory business has been reached and there is still a wide request maintained. Toward the close some grades of bleached cottons and wide sheetings were reduced, although there are no stocks on hand. Stocks of goods are remarkably light, while a large production is under control of orders which were pressed for delivery beyond the ability of agents to comply with. Whether for brown, bleached, colored or fancy cottons it is the same, except that desirable qualities of the latter two are better conditioned than the former. The manufacturing, converting and finishing branches of trade are large consumers of all qualities of gray and bleached cottons, and have maintained their inquiries with much steadiness, besides locating many engagements for immediate and future delivery. Prints of all styles were in large distribution at jobbing hands throughout the country, with the large demand continuing for narrow goods. For wide goods certain styles have done well, but preference for work and popularity was reflected in the demand of agents, some of whom report trade as having been good. Dress goods did well in the way of deliveries on old engagements and reorders for new assortments, and for the season the business will exceed the proportions of any. Gingham were in delivery to the extent of receipts, but as the production of autumn work is well nigh exhausted new business was restricted for want of supplies. Many orders were received for duplicate assortments, but were too late to be classified, and unless filled by substitutes the more urgent requirements were secured of competitors wherever obtainable.

**Drugs and Chemicals.**—Business is only moderate, and is mostly of a jobbing character. Quotations are: Bleaching powders, \$1.95@2.10; caustic soda, \$2.40; soda ash, \$1.25@1.35; sal soda, \$1.20; acetic acid, 2½@2¾c.; oxalic acid, 8@8½c.; citric acid, 50@51c.; tartaric acid, 43@45c. for crystals; acetate of lime, 1.80@1.85c. for brown; aloes, 5½@6c. for Cape; alum, \$1.75@1.87½ for lump and \$1.87½@2 for ground; ammonia carbonate, 8c. for English; assafoetida, 6@10c.; arnica flowers, 7½@10c.; albumen, 15½@16c. for foreign blood; arsenic, 2½@3c.; balsam copaiba, 32@42c.; balsam tolu, 32@34c.; balsam Peru, \$1.15@1.20; bichromate of potash, 10½c. for Scotch; borax, 5½@6½c. for refined; blue vitriol, 4½@4¾c.; brimstone, \$18.75@19 for seconds; buchu leaves, 7@7½c. for shorts and 24@25c. for longs; cantharides, \$1.65 for Russian; camphor, refined, 22½c.; castor oil, 17@18c. in bbls. and cases; cardamoms, 60@80c. for Aleppo and 75c.@\$1 for Malabar; cassia buds, 10@10½c.; camomile flowers, 6@25c. for Roman and 15@28c. for new German; cutch, 6½@8c.; chlorate of potash, 15@15½c. for crystals and 15@15½c. for powdered; cochineal, 30c. for Teneriffe silver; cream tartar, 34@35c. for crystals and 35@36c. for powdered; gambier, 5½c.; ginger, 16c. for Jamaica bleached and 10½@13c. for unbleached; glycerine, 22@24c.; Guarana, \$1.35@

1.45; iodide of potash, \$2.70@2.83; licorice paste, 28@30c. for P. & S. and 30@32c. for Corigliano; manna, 46@47c. for small flake and 80@85c. for large flake; morphine, \$3.20@3.60 for domestic; opium, \$4.65@4.70 for new, duty paid; oil cloves, \$1.70@1.85; oil cassia, 65@70c.; oil anise, \$1.90@1.95; oil lemon, \$1.65@1.85, as to brand; oil sassafras, 33@36c.; oil wintergreen, \$2@2.05; oil bergamot, \$1.75@2.37½; oil peppermint, \$3.25@3.60 in tin and \$3.25@3.35 in glass; prussiate of potash, 18½@19c. for American yellow; quicksilver, 51@52c.; quinine, 38@39c. for German and 44@47c. for American; roots, 3½@4c. for gentian; Seneca root, 30c., and Colombo root, 7½@12c.; ginseng, \$1.80@2; sarsaparilla, 7@7½c. for Mexican; seeds, 6½@7c. for Trieste brown mustard and 4@4½c. for California yellow; senna, 30@32c. for Alexandria; shellac, for D. C. 16@16½c. per lb.; V. S. O., 13c. per lb.; I in diamond, 13@13½c. per lb.; sticklac, —c. per lb.; sugar of lead, 5½@5¾c. for brown and 12c. for white; tonka beans, \$1.25@1.40 for Angostura.

**Fruits.**—In foreign dried business is moderate. Turkey citron, currants and raisins are very firm. It is reported that the crop of Princess paper shelled almonds is small, and prices abroad are rapidly advancing. Consequently the stock of good old ones is held stronger, and 21½c. is asked. We quote: Valencia raisins, 7½@8½c.; loose muscatel, \$1.25@1.30; London layers, \$1.30@1.40; Sultana, 8½c.; Ondara layers, 7@7½c. Almonds—Princess paper shelled, 21½c.; Sicily, shelled, —c.; Jordan, 40c.; Tarragona, 14½@14¾c.; Ivica, 14¾c.; Languedoc, 14c.; French sardines, 11@11½c. for quarter boxes and 15@17c. for half boxes. Citron, 18@18½c. Currants, 5½c. Figs, 8½@12c. Turkey prunes, 3½@4c.; French prunes, 6½@7c. Grenoble walnuts, 13½@14½c.; French, do., 7½c.; Naples do., 14½c. Sicily filberts, 7c.; Naples, do., —@—c. Dates, 4½c. for Persian in boxes and 6@7½c. for fards. Brazil nuts, 5½@6c.; Chili walnuts, new, 7½@7¾c. In fresh fruits apples are moving slowly; prices on choice are about steady, but all others are weak. Watermelons are quiet and easy. Peaches are firmer for choice yellow, which are in moderate receipt. Pears are in good supply; Bartlett's are easier. A quiet trade in huckleberries. Choice plums are selling fairly at steady prices; inferior lots are quiet and weaker. In domestic dried all the new fruits arriving are held strong and are taken steadily in small lots. We quote: Apples—Fancy evaporated, 12c.; do., fair to good, 10@11c.; do., State sliced, 4@7c.; do., do., quarters, 4½@5c.; do., Ohio and Michigan quarters, bbls., 4½@5c.; do., old, 2½@3½c. Cherries, pitted, 16@17c.; raspberries, evaporated, 24@25c.; do., sun-dried, —@—c.; blackberries, prime, new, 8½@8¾c.; whortleberries, —c.; plums, —@—c.

**Freights.**—There is no let-up in the depression of berth freights, room being plenty, while offerings continue very moderate. The extreme low point for steamer grain room to United Kingdom ports has not had the effect of stimulating shipments, and no difficulty is experienced in filling all orders for grain at 1¼d. to Liverpool and London. Grain charters are slow, even at the concession in rates quoted in our last, and it is difficult to get over 2s. 6d. for the best vessels. Tonnage is not plenty, but there is very little demand for it. Barrel-petroleum carriers are in limited supply, but few appear to be wanted. Case-oil tonnage for the Far East is scarce and in demand, with an advance of twenty cents paid for two vessels to arrive for Calcutta. Rates on other far-away ports rule strong in sympathy. Cotton freights are beginning to attract some attention, yet few charters have thus far been made. The South American business continues slow, but rates have not been influenced, as tonnage is not very plentiful. West India vessels are wanted, but difficult to obtain at charterers' views. Coastwise lumber rates rule strong. Colliers are quiet.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provis'ns.	Cheese.	Beef.	Pork.	Cattle.
Liverpool	1¾	5@6.3	6.3@7.6	12.6@15	12.6@15	20.	2.6	1.9	1.9
London	1¾ noml.	7.	8.	10.	17.6	25.	3.	2.	2.
Glasgow	2 asked.	8.9	10.	10.	12.6@20.	30.	3.6	2.9	2.9
Bristol	3½*	8.9	10.	11.	12.6@17.6	22.6	3.6	2.6	2.6
Leith	3*	10@11.3	11.3	13.9@15	16.3@20.	22.6	4.	3.	3.
Hull	2 asked.	10.	12.6	11.3@12.6	17.6@20.	25.	4.	3.	3.
N'wcastle	3*	11.3	12.6	11.3@12.6	17.6@20.	25.	4.	3.	3.
Antwerp	3 asked.	10.	15.	15@17.6	15@17.6	25.	3.6	2.6	2.6
Hamburg	30@35	..	..	80 pf.	..	..	..	..	..
Bremen	..	..	..	1m.	..	..	..	..	..
Copenh'n	15.9d.@2	..	..	20.	..	..	..	..	..
Marseilles	25.6d.@3*	..	..	20.	..	..	..	..	..

\* Store.

Cork for orders, sail, 3s. 6d. Steam, 2s. 7½d. Direct port, United Kingdom, 3@6d. less.

	Refined Petroleum.	Naphtha.	Cases.
Cork and United Kingdom	2.0@2.9	2.3@3.	Levant.....13@15
Direct port, United Kingdom	1.11½@2.6	2.1½@2.6	Adriatic.....13@14
Direct Continent	1.11½@2.6	2.1½@2.6	Mediterranean.12@14
Baltic	2.6	2.7½	

**Flour and Meal.**—State, Western and city flour has been in light demand, but prices are unchanged. We quote: No grade, \$1.90@2.10; fine, \$2.10@2.20; supers, \$2.60@3.25; extras, No. 2, \$3.10@3.50; extras No. 1, \$3.40@4.25; clear bakers', \$3.75@4.10; straight bakers', \$4.10@4.35; patents, \$4.30@4.75; city extras (European), in 140-lb. sacks, \$3.50@3.80; city West Indies, \$4.25@4.30; city patents, \$4.30@4.75. Southern flour is quiet at previous prices. We quote: Fine, \$2.60@3; supers, \$3.15@3.25; extras, \$3.25; Richmond first, \$5@5.12½; Richmond second, \$4.62½; patents, \$4.75@5. Rye flour is in light demand and prices are steady. We quote: Fine, \$2.20@2.25; superfine, \$2.75@3.10. Corn meal is steady and in fair demand. We quote: Western kiln dried, \$2.60@2.80; do. white, \$2.85@3.60; Brandywine, \$2.90@2.95; Western bags, 90c.@\$1.35.

**Grain.**—Wheat options have ruled quiet and for the most part easier. Closing quotations were: September, 79½c.; October, 80½c.; November, 81½c.; December, 83½c. Cash wheat has been in moderate request, but bulk of sales has been a



easier prices. Sales have been at 80c. for No. 2 red f. o. b., 80½¢@80¾¢ delivered; 77½¢ for No. 2 Chicago spring, 85½¢ for No. 1 hard; 79½¢@79¾¢ for No. 2 in elevator; 77½¢@80¾¢ for ungraded; 78c. for No. 2 Chicago to arrive. Corn options have moved fairly well and prices have been steady. Closing figures were: September, 49½¢; October, 49¾¢; November, 50½¢; December, 50¾¢; May, 52½¢. "Cash" corn has been in moderate request, and with very small offerings, full prices have been obtained. Sales on spot and to arrive were at 50½¢@51c. for No. 2 mixed, afloat, 49¾¢ in store, and 50½¢@51c. for ungraded. Oat options have moved slowly, but the tone of the market has been steady. Closing figures were: September, 31½¢; October, 31¾¢; November, 32½¢; December, 33½¢. "Cash" oats have been in fair call at better prices. Sales have been at 37c. for No. 1 white, 34½¢@34¾¢ for No. 2, 33½¢@33¾¢ for No. 3, 32c. for No. 1 mixed, 31½¢@31¾¢ for No. 2, 31c. for No. 3, 30c. for rejected, 33c. for No. 2 Chicago, 32½¢@33c. for mixed on track, and 35¢@40c. for white on track.

**Leather.**—The market for all descriptions has ruled quiet. Values are steady. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 12¢@20c.; middle do., 20½¢@21c.; heavy do., 20½¢@21c.; light seconds, 18¢—c.; middle do., 18½¢@19c.; heavy do., 19c.; damaged, all weights, 16¢@16½¢; common hide, light, first selection, 17½¢@18c.; middle do., 20¢—c.; heavy do., 20¢—c.; light seconds, 16¢@17c.; middle do., 17¢@18c.; heavy do., 17½¢@18c.; damaged, all weights, 15¢@16c.; rejects, 11¢@12c.; acid hides of all kinds, light, first selection, 17¢@17½¢; middle do., 19½¢@20c.; heavy do., 20¢@24c.; light seconds, 16¢@18½¢; middle do., 17¢@18½¢; heavy do., 18¢@20½¢; damaged, all weights, 15¢@15½¢. *Union Tanned*—Slaughter light backs, 20¢@30c.; middle backs, 28¢@30c.; middle backs, heavy, 29¢@30c.; second backs, 26¢@27c.; light crop, 26¢@27c.; middle crop, 25¢@27c.; crop seconds, 24¢@25c.; bellies, 19¢@13½¢. *Calcutta Buffalo*—Light, 15¢@16c.; middle, 15¢@16c.; damaged, 13¢@14c.; poor damaged, 10¢@12c.

**Lumber.**—The market for pretty much all leading descriptions offers a fair outlet, and trade generally is in a very encouraging condition. Prices are not weak, and values are generally unchanged. Laths are not very plenty either on spot or to arrive, and the market rules steady at \$2.20@2.25 for Eastern. Quotations are: Spruce, random cargo, \$13.50@17.50 per M. feet; do., special cargo, \$17@18. White pine, South American shippers, per M. feet, \$28@30; do., West India shippers, \$17@19; do., box boards, \$15@18. Yellow pine, random cargo, \$19@21; do., special cargo, \$20@22; do., green flooring boards, \$18@19; do., dry flooring boards, \$21@23; do., siding, \$21@24; do., cargoes, f. o. b. Atlantic ports, rough, \$13@15; do., cargoes, f. o. b. Atlantic ports, dressed, \$18@20; do., cargoes, f. o. b. Gulf ports, rough, 12¢@14; do., cargoes, f. o. b. Gulf ports, dressed, \$19@21.

**Metals.**—Pig Iron—American pig has been very quiet, apart from the movement in delivery on former contracts. Consumers are evidently well supplied from these deliveries, and manifest little interest with respect to future requirements. Some favorite Lehigh brands No. 1 X are scarce and quoted exceptionally high, but other good brands are available at \$21.50, and some not so well known can be secured at \$21, or possibly a shade less. No. 2 X is quoted at \$19@20, as to brand, with several thousand tons of a good make offered at \$19.50. Gray forge remains at \$17.50@18.50 at tidewater. Scotch pig has been rather quiet. The larger consumers are supplied from stock arriving on previous purchases, and the smaller concerns buy merely in a hand-to-mouth way. Quoted: \$20.50 for Bglinton, \$20.75@21 for Dalmellington, \$21@21.25 for Gt. Glenarnock, \$21.50 for Gartsherrie, \$22@22.25 for Summerlee, \$22.25@22.50 for Shotts and \$22.75@23 for Coltness. Bessemer pig is nominally about \$20 for ordinary brands in mixed numbers. The demand continues slow. Spiegeleisen remains quiet, with 20 per cent. quoted at from \$26@26.50 for German to \$27@27.50 for English. Steel Rails—A large quantity in lots has been sold for delivery the last three months of the year at prices ranging between \$36 and \$37.50 at Eastern works, with inside rate on Southern business. Several contracts for 1888 delivery have been closed on private terms, said to be not over \$36 at works. Old Rails—The market continues flat, with some indications of rather more disposition to sell. Tees can be bought at \$23.50 and double-heads at \$24 here. About 500 tons tees sold at \$24.25 on cars at Philadelphia, and 500 tons double-heads at \$24 on cars at Jersey City. Scrap Iron—Wrought scrap has been offered at \$20 ex vessel, without finding buyers, and \$21 would probably buy yard lots. Copper—Lake ingot has been very quiet and is a trifle easier. Speculative interest has subsided somewhat and consumers buy nothing to speak of. The trading toward the close has been small and mainly October, at 10.90c. For cash lots 10.70c. was quoted. Lead—Pig lead has changed somewhat for the better. Cheap lots have been cleaned up for the time being, and 4½¢@4.65c. was as low as anything could be secured. Local demand is moderate, but the out-of-town trade seems very fair. Tin—Pig tin has been very quiet, speculation being at a pause pending developments abroad and the placing of a quantity or so due at this port within the next week. Consumers, meanwhile, buy only in a hand-to-mouth way. London cables quoted £102 12s. 6d. for spot and £102 5s. for futures. Spot prices at the close were: Straits, 23.10c. cash for five to ten ton lots, and 23½¢@23.30c. cash, 23½¢@23.40c. 30 days, for ordinary store parcels. English L. & F. about 23½¢ cash, 23½¢ 30 days, and Banca, 24c. nominal. Tin Plate—The market has been quieter. Spot demand has slackened off and the higher prices asked check business in futures to greater or less extent. Spot lots were quoted as follows: Charcoal, ½ cross assortment, Melyn grade \$5.15@5.20, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$4.65@4.70, each additional X add \$1; charcoal terne, M. F. grade, 14x20, \$6.30; M. F. grade, 20x28, \$12.80; Worcester, 14x20, \$4.75@4.80; Worcester, 20x28, \$9.70@9.75; Dean grade, 14x20, \$4.30; Dean grade, 20x28, \$9; Allaway grade, 14x20, \$4.20@4.25; Allaway grade, 20x28, \$8.70@8.75. I. C. coke—B. V. grade, \$4.55; J. B. grade, 14x20, \$4.62½@4.65; I. C. Bessemer steel, squares, \$4.55 basis; I. C. Siemens steel, squares, \$4.65 basis.

**Molasses.**—The market has ruled quiet and steady, with a fair jobbing demand for grocery grades. In New Orleans grades straight goods have been in good demand, and owing to moderate stocks prices have ruled firm. There have been sales of sugar-house at 10c. for ordinary, 11½¢ for extra heavy, the market closing at ¼¢ better asked on both grades. Straight sugar grade syrups are active and firm,

production being closely sold up. We quote common to fine, 21¢@30c.; Cuba, boiling, —c.; Porto Rico, 25¢@38c.; Barbadoes, 23¢@28c.; New Orleans, common to fair, 30¢@35c.; do., fair to good, 36¢@40c.; do., prime to choice, 40¢@50c.; do., fancy, 52¢@55c.

**Naval Stores.**—The spirits of turpentine market is quiet but steady, with closing sales at 32½¢. Rosins are in light demand and prices are steady. We quote: Common, \$1.05; good strained, \$1.07½@1.10; E, \$1.20; F, \$1.30; G, \$1.40; H, \$1.55; I, \$1.55@1.60; K, \$1.67½; M, \$1.80; N, \$1.95; W G, \$2.30@2.33½, and W W, \$2.90. Tar is quiet and quoted at \$2.10@2.12½ per bbl. Pitch is quiet and steady at \$1.35 f. o. b.

**Paper.**—Owing to the high prices of raw jute stocks, the officers of the Manila Division of the American Paper Manufacturers' Association have ordered a second advance of ¼¢, to go into effect September 1. Manila mills are busy. No. 1 manillas are scarce and firm. Book and news mills are crowded with orders. During the month a 10,000-ton order for news was placed at 4 13-16c. Prices on wall-paper are irregular and low. Straw wrappings are having a good volume of business and prices are steady. We quote: Fine flat caps, 13¢@15c.; superfine, 16¢@17c.; record and ledger, 18¢@22c.; supersized and calendered book, 7¢@8½¢; do. do., extra machine finish, 7¢@7½¢; do. do., low grade, 6½¢@7½¢; news, No. 1, 5c.; do., rag and wood, 4½¢@5c.; do., straw, 5½¢@5¾¢; manillas, No. 1, light weight, 7½¢@8c.; do., heavy weight, 7¢@7½¢; No. 2 manillas, 5¢@6c.; bogus do., 2½¢@3c. straw wrapping, heavy weight, 1½¢@2c.; do., do., light weight, 2½¢@2¾¢.

**Petroleum.**—The "certificate" market is quiet, closing a shade higher at 62¢@62½¢. In refined, barreled oil was in only moderate demand. Refiners still hold at 6½¢ for 70° Abel test, and bids of 1-16c. fail to locate any oil at less than the official price. In case oil there is a fair average trade and the market remains quite steady at 8½¢ for plain brands. Crude in barrels quoted at 5½¢ for Bradford and 6½¢ for Parker. Naphtha quoted at 7½¢ for prime city. Home trade lots barreled oil quoted at 7c. for 110° test standard white; 7½¢ for 120° test do.; 7½¢ for 130° test do.; 8½¢ for State test do., and 8½¢@8¾¢ for 150° test water white.

EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO AUGUST 31.

	1887.	1886.
From Boston.....	gals. 2,875,035	3,579,572
Philadelphia.....	108,511,880	99,101,648
Baltimore.....	5,850,658	11,908,637
Perth Amboy.....	10,424,592	3,394,236
Totals.....	gals. 127,671,159	117,984,093
From New York.....	249,283,877	261,043,377

Total exports from United States.....gals. 376,955,036 379,027,470

**Provisions.**—There is only a small jobbing demand for spot pork at old prices, as the West India shippers are out of the market. At Chicago the option market was firmer in face of larger receipts of hogs West and an easier corn market, supposed to have been caused by the carriers to get wider carrying charges. January opened at \$12.30, advanced to \$12.32½, and there closed. Quotations: Old mess at \$15@15.25; new mess at \$15.50@15.75; city short clear, \$16.75@17.50, and Western do. at \$15.25@16.25; extra prime at \$14.50; prime mess nominal, and family mess at \$15.50@17.50. Middles were advanced in Chicago by the carriers 7½ points after opening, and closed 2½ off, September ruling at 7.90c., 7.97½c. and 7.95c. The speculative trade was chiefly in switching. The home demand West for meats is reported slack, while there is no export trade doing except for the regular weekly shipments of fancy English cuts. Beef is slow and unchanged, though there is a fair jobbing and export trade doing in small lots, and the feeling is not so weak at late reduction in prices. We quote: City extra India mess at \$10.50@12; extra mess in bbls. at \$7@7.50; packet, \$7.50@8 per barrel; plate at \$7. Beef hams are still offered at easier prices, but there is little demand, and that only of a hand-to-mouth character. At the West \$15.50 is quoted, and here \$17. Lard closed more active than of late and more so than Chicago, in good part switching the nearer over to the later options, although there was more new business doing in the latter, with January the favorite after October and September, which were the most active. There was no apparent cause for this, as Chicago was reported dull, although 2½ points firmer with the whole speculative provision list. Exporters and refiners were both in the market for a little more stock, and Western were sold, about half for export, the balance for refining, at 6.72½@6.75c., closing at the outside price. City was lower, selling at 6.60c. Refined quiet. Continent quoted at 7c. and South American at 7.40c.

**Starch.**—Western corn is in fair demand and prices remain firm at 2½¢ for bbls and 2½¢ for boxes. Potato is firm at 4¢@4½¢.

**Stearine.**—The market is dull and easier, with small sales. We quote: Western and city at 7½¢@7¾¢; oleomargarine at 6¢@6½¢.

**Sugar.**—Raw—There has been an active demand, the steady outlet for refined having encouraged refiners to replenish their stores. The higher grades have received most of the early attention, but the advance established for good Muscovados turned the attention of buyers to centrifugals, which likewise moved upward, so that the whole market is upon a higher plane of values. Muscovados have sold up to 4 11-16c. for 8½ test and centrifugals at 5½¢ for 96 test, and the market left off strong at these prices, with little or nothing obtainable for less. No business has been reported on cost and freight terms, but with light offerings prices have ruled firm. Muscovados would readily bring a 11-16c. for 8½ test, at which the last sale was made, and centrifugals would sell with equal facility at 3c. for 96 test for shipment, but the offerings are held higher. The value of beet is still too high to admit of business in this market. The corner in August contracts in Germany would appear to have been settled, as quotations have fallen to their normal basis, but the market is quoted firm, while cane sugars are quoted higher. Late sales were: English Islands, 97.20 test, 4½¢; Cuba Muscovado, basis 8½ test, 4 11-16c.; Barbadoes to arrive, basis 8½ test, 4 11-16c.; English Islands, 84½ test, 4 5-16c.; English Islands, various, private terms. Cuba centrifugal, 96½ test, 5½¢; Cuba molasses, 87 test,



4½c.; do. 85 test, 4½c.; Jamaica centrifugal, 95½ test, 5 5-16c.; Demerara centrifugal, 97 test, 5 13-32c.; San Domingo molasses 90 test, 4½c.; Cuba centrifugal, 96.20 test, 4½c. Refined—There has been an active demand, and with production closely sold up the market has ruled strong at a slight advance. We quote, less drawbacks for export: Cut loaf, \$3.95; cubes, \$3.56; crushed, \$3.92; powdered, \$3.55@3.56; granulated, \$3.18.

**Tea.**—There has been a fair country demand for Japans and Formosas at hardening prices, and other descriptions have been salable in lines at full auction rates, but local jobbers do not seem disposed to early stocks beyond their current requirements, even at the low prices now current, and accordingly sales by private contract are limited to very small parcels. Cable advices from the East quote rather lower prices for greens and oolongs, but much lower prices must be established to allow shipments to this market at a profit. The prices at the closing auction were as follows: Moyune green, including hyson, at 12@20c.; young hyson at 9½@36c.; imperial at 16½@23½c., and gunpowder at 14@40½c.; Pingsuey, including young hyson, at 11½c.; imperial at 21@21½c., and gunpowder at 14@30½c.; Japan, including pan-fired, at 14@20c.; basket-fired at 14@20c.; half-chests congou at 11@23c.; Formosa oolong at 19@28½c., and Amoy oolong at 13@14c.

**Tobacco.**—Kentucky has ruled quiet but generally steady. No important sales are announced. We quote: Common lugs, 4½@5½c.; good, 5@7c.; low leaf, 6½@8½c.; good, 9@11½c., and fine, 10½@16c. Virginia is characterized by a very

slow distribution, but no quotable changes in prices are noticed. We quote prices as follows: 5@7c. for common to good lugs, 7½@9½c. for common to medium leaf, 10½@11½c. for medium to good dark do. and 12@13c. for good to fine dark do.; common to medium bright wrappers, 21@24c.; fair to good, 25@35c.; fine do., 35@50c.; common smokers, 6@10c.; good do., 12@15c.; fine cutters, 22½@27½c. Seed of crop of 1886 continues in good demand, and considerable business is reported. We note sales of 1886 Dutch, at 9@9½c.; 1881-3 Pennsylvania, at 12@15c.; 1886 State Havana, p. t.; 1886 New England Havana, p. t.; 1886 do. seed, p. t., and 150 do. 1886 Wisconsin Havana, p. t. For foreign there continues a moderate inquiry, with sales of Havana at 60c.@1.05 and Sumatra at \$1.30@1.60.

## STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuega.	Yara.
Stock August 1, 1887.....bales.	45,384	....	....	16	1,336
Received since.....	5,688	....	....	13	210
Totals.....bales.	51,072	....	....	29	1,546
Delivered since.....	9,729	....	....	....	314
Stock September 1, 1887...bales.	41,343	....	....	29	1,232

**Wool.**—The market is quiet and there is no change of prices. Closing sales were: Fine washed, 22½c.; medium washed combing, 39c.; fine unwashed fleece, short extra pulled, and unwashed Virginia, on private terms. Ohio, fleece, X, quoted at 32@32½c.; do. XX, 33c.; Territory, 21@24c.

### Exports of Domestic Merchandise (Values Stated) from all Ports of the United States for the Month Ended July 31, 1887.

<b>Agricultural implements—</b>		<b>Fish—</b>		<b>Stoves and ranges, and parts of.....</b>	\$34,546
Horse-powers.....	\$600	Fresh, other than salmon.....	\$386	Wire.....	28,417
Mowers and reapers, and parts of.....	276,943	Dried, smoked or cured—		All other manufactures of iron and steel.....	224,609
Plows and cultivators, and parts of.....	26,027	Codfish, &c.....	61,725	Jewelry, and manufactures of gold and silver.....	87,756
All other, and parts of.....	72,354	Herring.....	5,766	Lamps and illuminating appliances.....	41,011
<b>Animals—</b>		Other.....	224,155	Lead, and manufactures of.....	6,376
Cattle.....	934,991	Pickled.....		Leather—	
Hogs.....	12,309	Mackerel.....	8,526	Buff, grain, splits, and all finished upper leather.....	196,277
Horses.....	26,507	Herring.....	13,825	Patent or enameled.....	16,421
Mules.....	3,230	Other.....	1,702	Sole.....	381,410
Sheep.....	47,302	Salmon—		All other.....	23,222
All other, and fowls.....	1,120	Canned.....	29,302	Manufactures of—	
Art works: paintings and statuary.....	11,153	Other.....	1,794	Boots and shoes.....	48,110
Bark, and extract of, for tanning.....	20,633	Canned fish other than salmon.....	2,152	Harness and saddles.....	11,648
Billiard and pool tables and apparatus.....	5,564	Shell fish—		All other.....	20,321
Blacking.....	15,539	Oysters.....	6,106	Lime and cement.....	9,249
Bones, hoofs, horns and horn tips, strips and waste.....	22,439	Other.....	28,470	Malt liquors—	
Books, maps, engravings and other printed matter.....	129,523	All other fish.....	288	In bottles.....	50,940
Brass, and manufactures of.....	20,527	Flax, hemp and jute, manufactures of—		Not in bottles.....	6,138
<b>Breadstuffs—</b>		Bags.....	47,434	Marble and stone, and manufactures of—	
Barley.....	10,431	Cordage.....	54,789	Unmanufactured.....	11,441
Bread and biscuit.....	57,036	Twine.....	52,628	Manufactures of—	
Corn.....	779,931	All other.....	12,228	Roofing slate.....	6,020
Corn meal.....	67,800	Fruits, including nuts—		All other.....	24,870
Oats.....	9,272	Apples, dried.....	21,143	Musical instruments—	
Oatmeal.....	6,621	Apples, green or ripe.....	3,507	Organs.....	33,086
Rye.....	3,503	Fruits, preserved—		Pianofortes.....	15,033
Rye flour.....	406	Canned.....	17,692	Other.....	7,469
Wheat.....	12,158,368	Other.....	4,903	Naval stores—	
Wheat flour.....	2,974,316	All other, green, ripe or dried.....	62,167	Rosin.....	170,520
All other breadstuffs.....	47,400	Nuts.....	300	Tar.....	1,861
<b>Bricks—</b>		Furs and fur-skins.....	95,359	Turpentine and pitch.....	2,254
Building.....	2,329	Glass and glassware—		Oakum.....	2,860
Fire.....	5,215	Window glass.....	1,030	Oil-cake and oil-cake meal.....	297,860
Broom corn.....	7,236	All other.....	75,706	<b>Oils—</b>	
Brooms and brushes.....	11,536	Glucose or grape sugar.....	6,604	Animal—	
Candles.....	13,906	Glue.....	2,124	Lard.....	41,609
Carriages and horse-cars, and parts of.....	77,641	Grease, grease scraps and all soap stock.....	87,128	Sperm.....	3,746
Cars, passenger and freight, for steam railroads.....	6,877	Gunpowder and other explosives—		Whale and fish.....	25,315
Casings for sausages.....	42,306	Gunpowder.....	6,550	Other.....	33,426
Chemicals, drugs, dyes and medicines—		All other.....	58,555	Mineral—	
Acids.....	7,155	Hair and manufactures of.....	15,799	Crude.....	255,769
Ashes, pot and pearl.....	1,839	Hay.....	16,753	Naphtha.....	120,026
Dyes and dyestuffs.....	57,381	Hides and skins, other than furs.....	41,725	Illuminating.....	3,281,813
Ginseng.....	25,303	Honey.....	2,241	Lubricating.....	253,793
Medicines, patent or proprietary.....	101,895	Hops.....	4,139	Residuum.....	9,946
Roots, herbs and barks, n. e. s.....	11,037	Ice.....	6,755	<b>Vegetable—</b>	
All other.....	151,989	India-rubber and gutta-percha, manufactures of—		Cotton seed.....	89,313
<b>Clocks and watches—</b>		Boots and shoes.....	6,653	Linseed.....	7,335
Clocks and parts of.....	85,554	All other.....	75,434	Volatile or essential.....	9,318
Watches, and parts of.....	63,736	Ink, printer's and other.....	7,940	Other.....	2,755
<b>Coal—</b>		Instruments and apparatus for scientific purposes, including telegraph, telephone and other electric.....	64,533	Ore, gold and silver bearing.....	3,137
Anthracite.....	473,749	<b>Iron and steel, and manufactures of—</b>		Paints and painters' colors.....	42,993
Bituminous.....	195,741	Iron ore.....	240	Paper, and manufactures of—	
Coffee and cocoa, ground or prepared and chocolate.....	5,983	Pig iron.....	5,275	Paper-hangings.....	8,687
<b>Copper, and manufactures of—</b>		Band, hoop and scroll iron.....	97	Writing-paper and envelopes.....	14,428
Ore.....	270,098	Bar iron.....	6,032	All other.....	56,654
Ingots, bars, and old.....	65,815	Car-wheels.....	6,210	Paraffine and paraffine wax.....	137,750
Sheets.....	58	Castings, n. e. s.....	15,694	Plated ware.....	59,924
All other manufactures of.....	7,866	Cutlery.....	7,053	<b>Provisions, comprising meat and dairy products—</b>	
<b>Cotton, and manufactures of—</b>		Firearms.....	20,349	<b>Meat products—</b>	
Unmanufactured—		Ingots, bars and rods of steel.....	298	Beef products—	
Sea Island.....	18,330	Locks, hinges, and other builders' hardware.....	90,770	Beef, canned.....	203,868
Other.....	4,002,026	Machinery, n. e. s.....	310,086	Beef, fresh.....	471,529
Manufactures of—		Nails and spikes.....	38,921	Beef, salted or pickled.....	196,576
Cloths, colored.....	351,065	Plates and sheets—		Beef, other cured.....	171
Cloths, uncolored.....	811,657	Of iron.....	1,771	Tallow.....	456,004
Wearing apparel.....	24,113	Of steel.....	1,374	<b>Hog products—</b>	
All other.....	105,609	Printing-presses, and parts of.....	12,800	Bacon.....	2,727,970
<b>Earthen, stone and china ware—</b>		Railroad bars or rails—		Hams.....	501,983
Earthen and stone ware.....	20,236	Of steel.....	827	Pork, fresh.....	1,424
China ware.....	2,178	Saws and tools.....	110,010	Pork, pickled.....	295,002
Eggs.....	2,974	Scales and balances.....	22,087	Lard.....	1,666,435
<b>Fancy articles—</b>		Sewing machines, and parts of.....	139,948	Mutton.....	3,113
Perfumery and cosmetics.....	26,475	Steam-engines, and parts of—		<b>Oleomargarine—</b>	
Toys.....	4,539	Locomotive engines.....	16,400	Imitation butter.....	7,351
All other.....	32,604	Stationary engines.....	33,846	The oil.....	301,450
<b>Fertilizers—</b>		Boilers and parts of engines.....	12,824		



## General Notes.

THE British Government has notified the Department of State that the date for receiving applications for space at the Melbourne Inter-



national Exhibition has been extended from the 31st of August to the 31st of October, 1887.

THE Chilian Congress has passed a law granting a subvention to the Chilian Steamship Company, and exempting from the payment of import dues articles introduced for mining and other industrial purposes.

THE uses of the Trenton limestone are manifold. It yields the magnificently fertile soils of the Kentucky blue-grass region. It furnishes building stone and lime for the world. At some points, notably in Vermont, Pennsylvania and Tennessee, it is the basis of rich marble quarries, and in the Galena district of Northern Illinois and Wisconsin lead ore is found in the first eighty feet of this formation. At lower depths mineral water of value in a medical way flows from the Trenton limestone, and petroleum has long been discovered in it in small quantities at various points.

OF the overwhelming effects of German competition, our consul at Zurich writes as follows: "Taking a general survey of the commercial and industrial situation in this section of Switzerland, we find everywhere present and dominant the determined pressure of German enterprise and competition, flooding the land with all classes of her manufactures and products, and in most cases at the ruinous prices which inevitably follow overproduction." As a measure of self-protection the government is said to have resolved to impose a heavy duty on German imports.

MICA mines on the Lievre, not far from Montreal, Ontario, are being worked with good success with the aid of drills and compressed air. The average output of mica is from 500 pounds to 600 pounds for twenty-four hours, of which about one-third is available for the splitting-house, where it is split, then sent to the village to be cut into merchantable shape, and again reduced in the process by about two-thirds. Large quantities of refuse mica are stored up sometimes to be ground. When ground this mica is used greatly by engineers and others as a lubricant oil. It is also used largely for decorative purposes, and in the preparation of fireproof paints.

STATISTICS show that 53,000 wells have been drilled in Pennsylvania and New York since the discovery of petroleum, at a cost of \$200,000,000. These wells have produced 310,000,000 barrels of oil, which was sold at the wells for \$500,000,000. This represented a profit to the producer of \$300,000,000. The amount of oil exported is placed at 6,231,102,923 gallons. In the pool in Washington County alone \$3,200,000 has been expended in machinery and drilling. This does not include the many millions that are represented there in the natural-gas industry. Independent of the oil business there is about \$50,000,000 invested in natural-gas plants in Pennsylvania.

DISPATCHES from St. Petersburg state that the plans for the construction of a Russian military railway from the Caspian Sea to Vladivostock, on the Pacific, have received the final sanction of the Czar, and it is firmly believed that this railway, uniting by rail the Atlantic and Pacific, will be completed before October 1, 1891. Commenting upon this news the *Temps* says: "This immense railway system is directed defensively and offensively toward China. Besides its commercial advantages, it will permit Russia to effectively protect, in case of aggression, both the Amour territory and the Oussouri territory, which are constantly threatened by the proximity of Manchouria. She will be able to concentrate her armies at pleasure either upon the frontier of India or upon the frontier of China."

SUBMARINE cables are covering the world in all directions, so that very speedily no important port in either hemisphere will be without its connections. There are no less than twelve transatlantic cables in active operation, and another one from New York to Venezuela will probably be completed within a year. Cables are running the whole length of the Mediterranean Sea, another through the Red Sea. The Arabian Sea and Bay of Bengal are also cabled. In the Sea of Japan there are two, and there are five in the North China Sea, while there are four in the South China Sea. A cable is now being laid from Bangkok, in Farther India, to Penang, on the Malay Peninsula. This connects with cables running through the Straits of Malacca to Singapore, and from there to Java and Australia. There is a line now being laid on the west coast of Africa which will touch at Congo, San Paulo de Loanda and other seaport cities. From the southern terminus lines will be connected with Cape Town and Port Natal, from

whence there are cables along the eastern coast and through the Red Sea to Suez. Merchants in New York have their daily cable communications with Sumatra or Hong Kong, with reference to coffee, teas or silk, as a part of the ordinary business routine, so that in a commercial sense the globe which Columbus sought to circumnavigate has shrunk to insignificant proportions.

ACCORDING to *Engineering*, Mr. Amagat has succeeded in solidifying various liquids, by compressing them in cylinders of bronze and steel. He has also photographed the crystals after crystallization, by means of a ray of electric light traversing the interior of the vessel by glass cones serving as panes. The stages of crystallization can be observed in this way with chloride of carbon, and it is seen that the process varies with the rapidity with which the pressure is produced. If rapidly, a sudden circlet of crystals gathers round the edge of the luminous field, and grows to the centre. The pressure being continued, the field becomes obscure, then transparent. As the pressure is diminished the reverse takes place, and the liquid state is reproduced. Mr. Amagat finds that chloride of carbon solidifies at 19.5° C. under a pressure of 210 atmospheres. At 22° C. benzine crystallizes with a pressure of about 900 atmospheres.

### Catalogues and Price-Lists.

TO READERS.

THE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of THE MAIL in which they are noted.

MITCHELL & LEWIS COMPANY, Limited, Racine, Wis., U. S. A.—Illustrated catalogue and price-list of farm, plantation, freight and business wagons, driving wagons, &c.

FOLDING SAWING-MACHINE COMPANY, Chicago, Ill., U. S. A.—Illustrated catalogue of improved sawing machinery for cutting down timber, &c.

MOELLER & ASCHERMANN MANUFACTURING COMPANY, Davenport, Ia., U. S. A.—Price-list and illustrated catalogue of cigar makers' supplies, tools, &c.

SHAW & GEARY, Philadelphia, Pa., U. S. A.—Catalogue and price-list, with illustrations of electrical appliances.

CENTRAL FURNITURE COMPANY, Rockford, Ill., U. S. A.—Price-list, with catalogue of library furniture, &c., fully illustrated.

SAMUEL HARRIS & Co., Chicago, Ill., U. S. A.—Illustrated and descriptive price-list, 200 pages, of machinists' supplies and tools of all kinds.

BIRDSALL MANUFACTURING COMPANY, South Bend, Ind., U. S. A.—Illustrated catalogue of pleasure wagons, &c.

METCALF, PAUL & Co., Pittsburg, Pa., U. S. A.—Illustrated catalogue of special railway track tools, &c.

CRERAR, ADAMS & Co., Chicago, Ill., U. S. A.—Catalogue and price-list, 450 pages, profusely illustrated, of railway supplies.

H. L. SHEPARD, Cincinnati, Ohio, U. S. A.—Descriptive and illustrated catalogue of power and foot lathes, drill-presses, scroll-saws, engines and machinists' tools.

### Business Notices.

THE Hartshorn shade-roller, besides being sold in all parts of the United States, meets with a large foreign demand, its utility and convenience being of such practical demonstration that it is bought on sight. Merchants can safely offer this roller to their customers as being a first-class and superior fitting for window-shades. Stewart Hartshorn, East Newark, N. J., U. S. A., is the manufacturer, to whom all inquiries and orders may be addressed.

THE Elyria Shear Company has removed its plant and office to Tremont, Ohio, where it has erected a much larger manufactory and where it will be able to avail itself of natural gas for use in its forges. This change is calculated to facilitate production and give better opportunities for meeting the orders which this company's products command. After this date the address of the house will be: Elyria Shear Company, Tremont, Ohio, U. S. A.

THE Volker & Felthousen Manufacturing Company, Buffalo, N. Y., U. S. A., has taken contracts recently for water-works engines for Marion and Columbus, Kan.; Kewanee, Ill., and St. Paul, Neb. This firm manufactures a superior line of pumping machinery, and foreign buyers are invited to correspond with it. A large increase in its trade during the past year is reported, and the company has doubled its capacity for manufacture.



# AMERICAN MAIL

DEVOTED TO THE

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## Dredging and Excavating Machinery.

THE CANALS OF HOLLAND—EARLY IMPROVEMENTS IN DREDGING—  
WHAT AMERICA IS DOING—EXCAVATING BY SEA AND LAND—  
HYDRAULIC MACHINES—HOW THE BOTTOM OF A CHANNEL IS  
CLEARED.

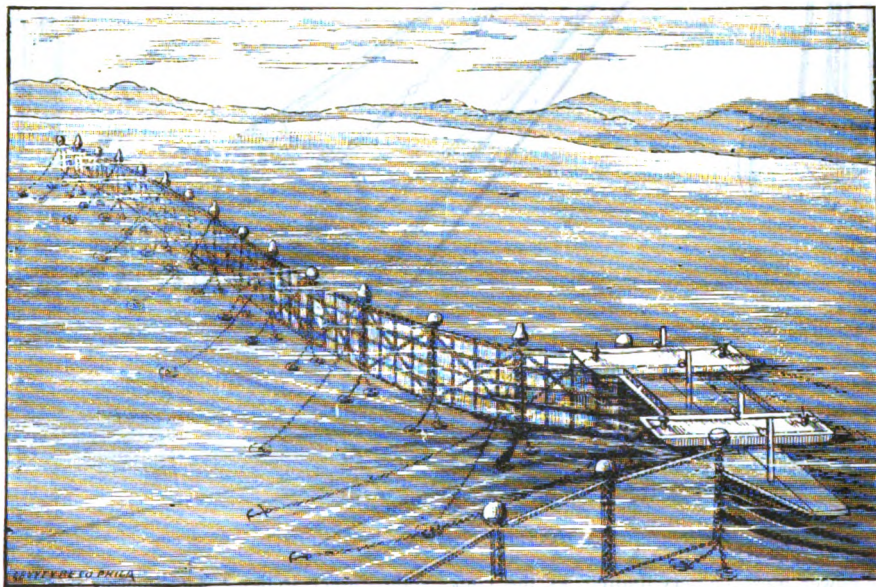
**D**REDGING machines, now so common, are only an amplification of the common shovel which is used by the gardener and husbandman to turn over the soil and remove a superfluity. Viewed as they may be seen in a river or harbor, they seem singularly unlike, but after all the main principle is the same. The bucket is forced

into the earth very much as a spade might be; when filled, some contrivance is fitted over the load to prevent its loss in raising, and when it has completely swung clear of the water it deposits its burden at one side. In the early years of European civilization nothing better than the shovel was known, and the first substantial improvement came from the Dutch. From the exigencies of their position they were compelled always to be digging to counteract the sea; canals must be excavated, the beds of rivers made deeper and dykes thrown up.

Their contrivances for this were copied elsewhere, but in time were much improved upon. Those now in use have only a very slight resemblance to these antique forms.

So far the greatest engineering work done anywhere has been in the excavation of the Clyde. Glasgow lies six miles from the ocean, and the water in the river, which is there an estuary of the sea, is shallow and naturally filled with bars. The current which pours down from the interior is manifestly unequal to the needs of so great a port as Glasgow if it were all contained in a canal made according to the rules of art. But it brings down great quantities of silt, and the sea dashes up with its waves many solid particles against what might be termed the front door of that city. Until excavating began, somewhere about 1840, the entrance was narrow and tortuous; the excavations which have been steadily in progress ever since that time have made it a harbor of great utility, not equal, of course, to Portland, Me., or Milford Haven, in Wales, but still sufficient. This has been accomplished by the dredging machine. These boats are kept going the year round, applying their force most where the water is the shallowest, but also devoting their attention to the whole length of the harbor. Seventeen millions of tons of soil have been moved in twenty-seven years.

Labor like that which that port has required has also been needed in hundreds of other places. Fleets of dredges are to be found in every country of the civilized globe ready to deepen the pathways of commerce and remove obstacles from its way. They are used in harbors, canals and navigable streams; they pick up rock from the bottoms of excavations and they cut through hills to allow railroads to penetrate. Many varieties are known and many special forms have been devised for special work. It is evident that the machinery and the appliances necessary for making a clean foundation for masonry at the bed of a quiet river must differ materially from that used simply to loosen up sand and gravel so that a powerful current may carry the material out to sea. In these modifications the United States have taken a great



CURRENT DEFLECTOR, TO SCOUR A CHANNEL.

part. We have 15,000 miles of coast line and a multitude of harbors upon them. Within these are great rivers which run one, two or three thousand miles, the larger carrying much sediment, which must be removed from time to time from the navigable channel. The great lakes have over seventy harbors. The largest of these lakes is the size of Ireland and the smallest is as large as Holland. Into these lakes flow a great number of rivers, some over 300 miles long and many over 100. They were nearly all regarded as navigable years ago, taking

boats from five to twenty tons on the smaller and from fifty to two hundred on the larger, and their good condition has therefore been a matter of interest to us. It is true that as the railroads became more numerous the value of these natural highways diminished, but this has been the case everywhere. Those in Great Britain have likewise become of little worth. But so far as they are used and so far as their mouths make harbors they are of great value. These mouths have nearly always a bar, where the deposits brought down from the highlands of the interior come to a rest and become united with the sand or loose material that the lake naturally has at this place, but which has been pushed aside by the current. This has afforded much work for the dredging machine, for it has been necessary to remove a portion of these banks or bars, and the work must be repeated after a few years, as the same causes which made them once will repeat the result. The mouth of the Mississippi has been cleared out by turning the momentum of the water into a narrower channel to scour out the bed, but in most cases there is not sufficient force, either from the tides or the rivers, to do a great deal in this way. The dredging machine must then be resorted to.

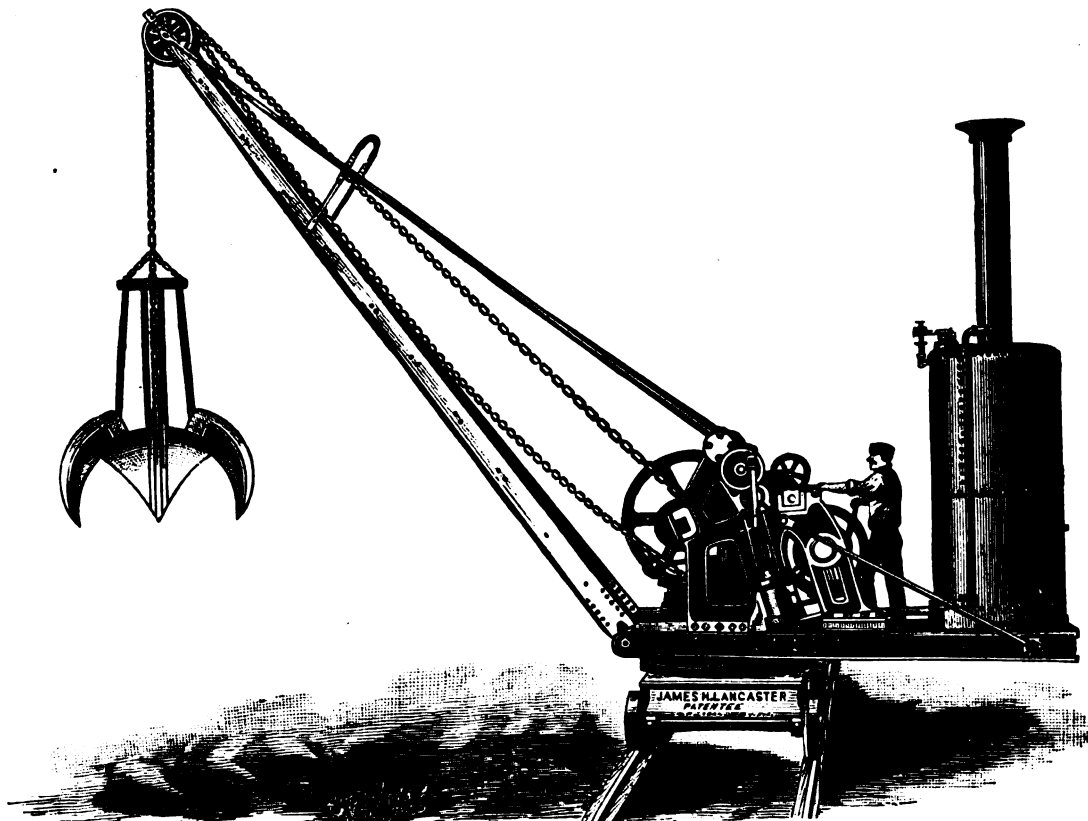
The earliest form that we know anything about was that used by the



Dutch in clearing out their canals. This must have been many hundreds of years ago, for the use of these canals depended upon having a uniform depth of water, and the feeders from the Scheldt, the Rhine, or any of the other great rivers of the interior must have brought in much loose soil, which would quietly deposit itself when the current became very slow. The whole of Holland, with the exception of one corner, is flat, and the streams which penetrate it come from regions far in the interior and generally speaking through an alluvial country. Holland would naturally have been the depositing ground, but the energy of her inhabitants has conquered this disposition of nature. The canal beds are kept low, and the soil thus taken out is year by year added to the banks and fields. The instrument first used was known as the bag and spoon. An iron ring two feet in diameter was secured to the open end of a bag. This was dipped into the water and drawn along the bottom until it was full; it was then pulled up and its contents were deposited in a barge. It will immediately

the bottom of a harbor, are so fitted in conjunction with pumps that they suck out the material at the foot of the pipe and carry it up till it reaches a scow or discharge pipe, into which it pours. In circumstances where this can be adopted this has sometimes proved very advantageous. There are bottoms, however, in which the suction is not strong enough to start the sand and gravel; it cannot touch large stones, or even those of a few pounds weight, and it can only operate at a few feet depth below the surface. It is also liable to be choked by too great a quantity of solid stuff, although it will allow about one-fourth. When the exit pipes or inclined planes are choked, the pipe is raised a few feet, and the current then being water only the obstruction is swiftly washed away.

English and French experience has, as usual in engineering matters, proved not to be useful in America. The conditions are so different, labor is so dear, and the time allowed for executing anything is so short, that new forms have necessarily had to be tried. One of these



LANCASTER'S GRAPPLING DREDGE.

occur to any reader that its power must be very limited, as the contents of the bag were not great; neither could it be worked swiftly, as the movements were made by a windlass generally turned by men, although in some cases by a mule, and the interval between one dip and another was considerable. It could also operate only in soft material. A second form was that of a bucket fastened to a cable or chain, which was suspended from two barges on the opposite sides of a river. It was drawn back and forth the requisite number of times to clear a channel of a certain width; the boats were then moved a few feet down stream or up stream, when the movement was recommenced. Both plans mentioned, however, were valueless when great quantities must be excavated, as from the necessary stoppages and their small power they could do but little. Steam dredging, which was first used in 1796, has become a necessity.

The commonest form in foreign countries is that of a series of buckets, which in turn dip into the mud at the bottom of a stream, carry up what is thus obtained until the receptacle turns over and discharges the contents into a shoot or upon an inclined plane. The belt which holds these buckets revolves at either end around a wheel, the lower one being at the bed of the river. In soft sand, quicksand, or mud this operates very well, but has not been found by American engineers to be as useful to them in the great variety of work they have to undertake as other forms. Another kind is where pipes, touching

is the dipper-dredge. The boat or scow upon which this is placed is very wide in proportion to its length. A powerful steam-engine serves for its propulsion when necessary to move it from place to place, and when stationary it does the dredging. At one end there is a gigantic crane, with a pulley at the extreme point, over which runs a chain. A huge bucket is fastened to the chain. When work begins the chain is run out, the bucket descends, is moved along by the crane a little distance when at the bottom, and then is drawn up with its load. There is another chain fastened to the bottom of the bucket, which is pulled when the latter is in the proper position and opens the bottom, the contents then being discharged. This is done very quickly, the successive scoops being made at from thirty to seventy times an hour when no obstacle is met with, and each time depositing an immense quantity. The smaller dredges have a capacity of two cubic yards of soil, while the larger may hold from eight to ten, and one is now in process of construction which will contain fifteen yards. It is believed that this will raise a thousand yards an hour. If it could be used on land it would, under favorable circumstances, excavate a canal six feet deep and twenty-five feet wide at the rate of a mile in three days. None of these dredges has more than one crane and one bucket.

A second variety, much used here, is the clam-shell dredge. This differs from the preceding in the form of the receptacle. Instead of this being anything resembling a pail or bucket, it is more like a



clam shell, from which it derives its name. The two sides are fastened together at the top with a hinge, and when the clam shell descends the mouth stands open. It sinks into the earth or gravel for a considerable distance, and then is drawn up. This act at once closes the jaws, and whatever is within them is carried up to the surface. The grip is disengaged in the same manner that the dipper-dredge is, by the pulling of a chain.

Frequently the bottom is too hard to be acted upon successfully by dredges. It is very compact and stiff, although only of earth. In this case long iron pipes are inserted in the material, and in the holes thus made cartridges are inserted, which are then exploded. These holes are deeper at the sides than in the middle, as when the crust is once broken the apex or centre can easily be dredged. The surface is always the hardest. The machines thus described are, however, equal to nearly all emergencies. They take up pebbles and large stones easily. Rocks weighing thirty tons have thus been handled. A few years ago there were a number of rocks projecting above the water or situated just below it at the eastern entrance to the harbor of New York. After many years' hard work the rock was tunneled below the level of the sea, and passages made everywhere through it. The whole was then blown up. Of course the size of the fragments varied a great deal. Some pieces were ten or twenty feet long, but most were much smaller. These latter have been picked up by the gripper-dredge, and are now nearly all out of the way. The jaws, however, in this case, instead of closing all around, as an egg would if once cut in two and then neatly joined, were more like a sugar-tongs, with the ends turning under, or like the talons of an eagle. To the customary forms, however, the ordinary gravel, stone, or even soft slate rock, offers very slight difficulties.

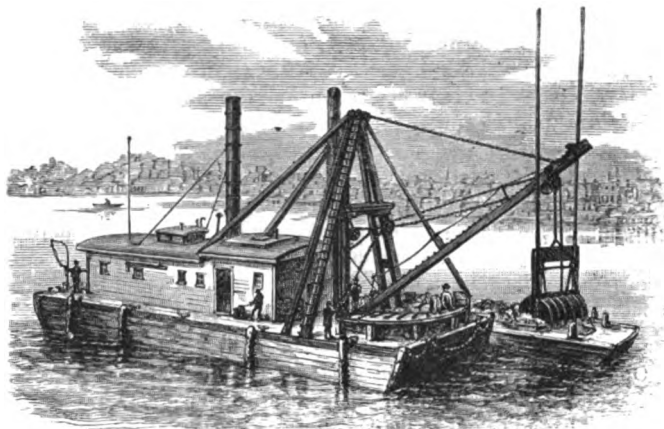
The operation of dredging proper is sometimes very much facilitated by dragging a sharp-edged instrument, like a hoe or a harrow, over the surface of an underground knoll, or even a plane surface. The steamboat from which this instrument projects goes over the route, and the plow tears open the ground beneath, thus making the action of the current upon it more effectual. In some cases much will be moved miles below, but in other cases all that is accomplished is to prepare the soil for the more easy action of the dredging machine. A desire to do this more thoroughly is the reason why dams are sometimes built to hold back water. Then, when opened at the right place, they plow a deep gully through the centre of the bed of the stream.

Another method of utilizing the forces of nature is to place walls or embankments against the river's side, which shall make the stream narrower but at the same time deeper by scouring out the passages. One plan for this improvement is by Prof. L. M. Haupt, of Philadelphia. He proposes that there should be sunk upon the edges of the centre of the stream a series of current deflectors. These would be of wood held in place by anchorages, but not touching the ground nor rising to the surface. In an unconfined river the current is greatest at the top, but farther down becomes very weak. When it runs between piers built as closely together as the volume of water will permit, the lower part of the stream moves nearly as fast as the top. It would scour violently in such places. Professor Haupt therefore confines the channel by temporary sides, but not touching the bottom, as this would undermine them. Should this be joined to the labor of the dredging machine it would enable the work of the latter to be done in half of the time.

An important process is that which operates by a centrifugal suction-pump. A pipe from ten to eighteen inches is inserted in the mud at the bottom of the water. All around it are little plows or excavators for loosening the solid ground, and there are other agitators to mix it thoroughly with the water, which then looks something like that from the Mississippi, but with much more sediment in it. The pump draws this mixture of soil and water through its pipes at the rate of 36,000 gallons a minute, the proportion of earth to water being from 10 to 20 per cent., and discharges it into boats or by long pipes to places at a distance. The swath cut by the one lately at work in the harbor of New York is sixteen feet wide by eight inches in depth, leaving the earth perfectly level or flat at the bottom. A powerful tug moves the mouth of the excavator backward and forward, thus obviating the tendency of the excavator to wander, as would be the case were it self-propelling. P. T. Barnum, the great showman, is using this plan for filling some flats near his residence. A gigantic dredger is moored in a creek nearby,

upon which is one of these pumps. The water is carried up as high as possible and then allowed to drain down upon this flat. The solid portion of course remains there, while the liquid flows off to sea. There are fifty acres in this tract, but he expects soon to find its surface several feet higher than the sea.

A form that can be used equally as well for land and marine purposes has the usual long crane and descending bucket, but its shape is very different from the others. This is made in a large number of pieces, which as they descend and have been filled turn toward each other and close up, then taking the contents away. It is operated by



"CLAM-SHELL" DREDGE.

a single man, and can be opened to clear without being raised. As applied in land work, it is placed upon a railway truck and pushed up against the hill or other ground to be excavated, the grappling bucket then penetrating the material and afterward enclosing it and lifting it with ease. This is the invention of James H. Lancaster. Several have recently been ordered for dredging the bar in the Guaymas River, on the Gulf of Mexico.

Steam excavators have been frequently used for railroads and other land cuttings. A car is pushed up against the bank and from it a gigantic shovel is thrust into the top. As it fills it is withdrawn, turned around by a crane, depositing the load at one side, or when it recoils the substance is deposited upon a car at the rear by a long belt. The clam-shell plan can also be used successfully.

Other things which dredging machines are used for is for lifting minerals, fire clay, phosphates, marl, ores, hard pan, gravel and clay from their beds, and for placer mining, rock dredging, sinking caissons and cylinders for bridge piers or deep foundations, lifting snags from streams, raising wreckage, digging wells and excavating canals, sewers and cellars. Anything not too solid can be thus taken up and lifted, the penetrating edges of the grapple or bucket entering the ground with very much more force than man can use a shovel or a pick-axe. The greatest power he can apply is that of his own weight; one of these strikes the ground with ten times that force. Grain can also thus be handled, as well as coal.

In all of these appliances America stands easily first. The work in this country is greater and more varied, and engineers have been less tied down by routine. The dredging machines at work in the United States represent a capital of five or six millions of dollars, and they are nearly constantly at work, frequently being employed in foreign countries. Thanks for information and engravings are due to the Atlantic Dredging Company, Morris & Cummings and the Deep Sea Hydraulic Company.

A MASSACHUSETTS firm has been awarded the contract for one of the largest pumping plants ever planned in America. The plant is for the city of Montreal, and consists of four centrifugal pumps, each with a discharging opening of twenty-four inches diameter and capable of handling 18,000 gallons of water per minute, and four similar pumps of fifteen inches discharge opening, and a capacity of 7,000 gallons per minute. Thus the four twenty-four-inch pumps have a combined capacity of 72,000 gallons per minute, 4,320,000 gallons per hour, 103,680,000 gallons, or 386,000 tons, of water per day of twenty-four hours; and the four fifteen-inch have a combined capacity of 28,000 gallons per minute, or 1,680,000 gallons per hour.



## Government Intelligence.

### Departmental and General.

THE COMING SESSION OF CONGRESS—THE FISHERIES ARBITRATION—THE CHINESE CONCESSIONS—THE SANDWICH ISLANDS—GERMANY AND SAMOA—EXTENDING GERMAN TRADE—OUR TRADE WITH CHINA—ARBITRATION BETWEEN GREAT BRITAIN AND THE UNITED STATES—THE TONNAGE TREATY WITH SPAIN—MEXICO AND AMERICAN CITIZENS—GRECIAN EMIGRATION TO THE UNITED STATES—THE UTAH COMMISSION—NEW ENTERPRISES IN THE SOUTH—PARCEL-POST ARRANGEMENT WITH JAMAICA—BOND PURCHASES—TREASURY STATEMENT—CONSULAR AND DIPLOMATIC APPOINTMENTS—NAVAL NEWS.

**A**LTHOUGH the President is absent from the seat of government, the wheels still revolve and the work goes on. In these days of rapid transit and speedy communication on the wings of lightning, the head of the nation would have to bury himself in mid-ocean or take refuge with Stanley in the wilds of Africa in order to get a rest from labor or to avoid any sight of red tape and public business.

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Only a short time will elapse before the Fiftieth Congress will assemble at the capital. In some respects it will be a notable gathering and promises to be one of the most interesting bodies of our national legislature that have sat down together since reconstruction days. As it will precede the political conventions and will start out just ahead of the Presidential election much stir will be made in a political way, and the lobbies will be overrun with visiting statesmen who "know it all." The tariff will be hauled up again in sight of all the people and once more be battered and pummeled by the freshman and sophomore in the school of statesmanship. What will be done with the tariff it would be folly to try and predict, but it is safe to say that a strong effort will be made by prominent gentlemen to have a change of some sort that will relieve the overfed surplus of which we hear so much. Mr. Carlisle has talked in a recent number of the *Forum* about a repeal of the tobacco tax and a cutting-off of the taxes now collected on the food of the poor. What the protectionists from the prosperous South and busy West will do under the guidance of Mr. Randall is as yet a mere conjecture, for the wily member from Philadelphia keeps his own counsel and has made no sign.

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The fishery dispute is quietly resting and there is nothing new with reference to its settlement save that the appointment of the two commissioners on the part of the United States again brings the matter before the public. The President has invited Wm. L. Putnam, of Maine, and James B. Angell, of Michigan, to act with Secretary Bayard in the negotiations for a settlement of these disputes. The gentlemen have accepted. Mr. Putnam is a Democrat and has for some years past been counsel for the United States in cases arising under law and treaty relative to fishery troubles. Mr. Angell is a Republican and president of the University of Michigan and also one of the regents of the Smithsonian Institution. He was one of the commissioners who negotiated the latest treaty with China and has had no little experience in international affairs. Now that the British authorities have designated the commissioners on their part, there seems to be nothing in the way of a conference as soon as the foreigners arrive in the United States.

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Sir John A. Macdonald, who is mentioned as the commissioner on the part of Canada, is seventy-two years old and was born in Scotland, although he has been in the public service of Canada for forty years, filling positions of exalted trust as a leader in his party. He is represented as holding the following opinions relative to the attitude of the Canadian Government toward this country. He believes in unrestricted interchange of natural products under a reciprocity agreement; he thinks that a commercial union between the two countries would be injurious—to Canada, because she could not compete with our manufactures, and to the United States, because it would result in

the smuggling of English manufactured goods. He does not favor annexation, because he deems it best to have on this continent two governments with different interests and different systems and he does not believe a fishery squabble, now and then, will seriously mar friendship. He cannot think an assimilation of tariffs would be practicable.

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It is understood that the Secretary of State will suggest that the commission shall consider the Atlantic fisheries, the Alaska seal fisheries, the Alaska boundary dispute and the question of commercial reciprocity between the United States and Canada advocated by Mr. Butterworth, of Ohio. As is well known, the last Congress showed quite a preference for retaliation and did not regard with much favor such a thing as a commission to negotiate a treaty; therefore it is doubtful if any work done by the commission will receive the approval of the next Congress. Perhaps the coming Congress may censure the action of the commission and thus make for naught what might otherwise be a peaceful and honorable settlement of a very troublesome affair.

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From Canadian sources it is reported that Minister Foster has been in consultation with the Premier at Ottawa, and that data and statistics are being collected, and as soon as the scope of the commission is known strong arguments will be prepared for Canada's side. It is also mentioned that the Canadian authorities are doing all they can to have the commission consider the question of reciprocity, but that the United States authorities are reluctant to give that power to the commission.

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With reference to the great Chinese concessions which were mentioned in last month's *MAIL*, there appear to be gathering some shadows; it looks as if there might be trouble ahead for those who had hoped so much. First comes the suit of the American Bell Telephone Company in the United States Circuit Court, at Baltimore, against Wm. C. Trumbull, the inventor of the long distance telephone. The Bell people filed a bill in equity and the judges have signed an order providing that until the hearing of the motion the defendant is restrained from directly or indirectly making, using or furnishing to others for use any electric speaking telephones or telephonic apparatus whatever embracing and embodying the invention and improvements or any material parts thereof claimed in the letters-patent of the complainant corporation. November 1 is fixed for the hearing, at which time the defendant is ordered to show cause why an injunction should not be issued against him.

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There is already a quarrel between Count Mitkiewicz and Mr. Trumbull, the latter asserting that the count has used his patent without authority, and now the Bell Company walks up and says that Trumbull is infringing, both schemes working to the detriment of the concessions. But this is not all, however, for there comes a telegram from London to the effect that the British Government has been informed that the Viceroy has notified Mitkiewicz that he cannot carry out the proposed arrangement with the American capitalists. With reference to this telegram from London, the count telegraphs to a friend as follows: "The concessions have been granted, and neither party has any desire nor has it power to withdraw. This pretended dispatch is the last effort of the English. Neither the syndicate nor the legation has any knowledge of such dispatch." At the Department of State nothing is known about the concession, as it is purely a business enterprise; and as it concerns nothing of a diplomatic nature the department officials are in no manner informed about it and refuse to attempt a solution of this much-advertised Chinese puzzle.

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The situation in the Sandwich Islands is by no means a pleasing one for those Americans who view the kingdom of Kalakaua as a valuable commercial adjunct to the trade of the United States. The Englishmen, from latest news, show a decided grip on the affairs of that much disturbed region. Of the four principal officials now serving the King as Prime Minister, Secretary of Foreign Affairs, Attorney-General and Secretary of the Interior respectively, three are natives of Great Britain and the fourth is the son of an American father and a native woman. These men have been the ruling forces in the recent revolu-



tion. In addition to this it is well known that the Queen upon her late trip to the Queen's Jubilee made valuable use of her time in negotiating a loan of \$2,000,000 through a London banking-house. These things, together with the late information that the British fleet has been ordered to the islands to protect the English bondholders, look very much as if Great Britain has a strong inclination to put a firm hand down upon the Hawaiian possessions. That these islands are of great value to the United States in trade relations is conceded by all well-informed people. Nearly the entire trade, both import and export, is with this country.

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England is not alone in the work of aggrandizement, for Germany, it appears, has seized upon the Samoan group of islands already and deposed the king. Four German men-of-war lying at Apia landed 1,300 troops and marines and immediately proclaimed Tamasese King of Samoa. The American and British consuls immediately published a notice "that we and our governments do not and never have recognized Tamasese as King of Samoa, but continue as heretofore to recognize Malietoa. We advise all Samoans to submit quietly, not to fight, whatever their provocation, but to await peaceably the result of deliberations now in progress, which alone can determine the future of Samoa." The cause of Germany's action, it is said, grew out of a row caused during the celebration of the Emperor William's birthday, at which time the natives and intoxicated Germans had a free fight. The German commodore demanded \$13,000 damages from King Malietoa. The King protested, asking time to consider, but almost at once the Germans landed and declared war against Chief Malietoa. This action on the part of the German authorities is looked upon by New Zealanders as practically an annexation by the former country. Secretary Bayard says that this affair and the action of Germany will not change the relations of this country either with Germany or Samoa.

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For some years past Germany has been steadily paying attention to colonization schemes and rapidly extending her trade with the countries along the Pacific Ocean. The following is taken from a German review to show what is being done in this direction: "German machines," says this journal, "manufactured goods and drugs supply the Celestial Empire and the neighboring island empire, the land of the setting sun, where German manners and views and methods are also introduced by the German professors, officials and officers who are employed there." In Brazil our trade has widened rapidly, and Hugo Zoller calls Porto Alegre a German Brazilian commercial town, 300 German firms being established there, some of considerable importance. The German Brazilian exhibition was very influential in improving our commercial relations with Brazil. German iron and iron goods come in large quantities into the Brazilian market, as well as German cloth stuffs, wearing linen and porcelain goods, the import of which for Rio Janeiro alone has risen to 20,000,000 marks in value, against 9,000,000 ten years ago. In the La Plata states our trade is greatly developing. The South American states have the most varied wants, which they can only supply from Europe, and it will be the business of the German merchants to win even wider sale districts in these lands than they have had to do with hitherto." The Imperial Government aids the German merchant in finding a market for his goods by its liberal policy toward German steamships.

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With regard to our trade with China, Minister Denby, in a recent report to the Department of State, says that one of the chief impediments to the opening of new branches of trade with the Chinese is the ignorance of our manufacturers and producers of the needs and tastes of the Chinese. In explanation of this he calls attention to hardware manufactures, noting that Chinese hardware, though cheap, is very inferior, and that if our manufacturers knew the wants of the Chinese they could make articles greatly superior in quality and at competing prices. He also says that among the natural products of China there are many which would be useful and salable in the United States were they better known. Some of the European nations, he writes, especially France, Germany and Belgium, are beginning to look more closely after the Chinese trade than formerly. They are establishing exhibitions where the novelties of Chinese production can be made

known, while a French syndicate has established an exhibition of French products in China.

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The American Arbitration League, through a circular from its corresponding secretary, asks for a treaty between Great Britain and the United States creating some permanent plan by which all differences between the two countries may be settled by arbitration. It is said a deputation from Great Britain with this object in view will soon visit the capital and present a petition to the President. This matter has at different times been discussed in Congress, but no such provision has ever been passed.

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The President has issued a proclamation putting into effect the agreement between the United States and Spain with relation to tonnage duties and imposts on vessels of the respective nations. The following is the treaty referred to:

1. It is positively agreed that from this date an absolute equalization of tonnage dues and imposts shall at once be applied to the production of or articles proceeding from the United States or any other foreign country, when carried in vessels belonging to citizens of the United States and under the American flag, to the islands of Cuba, Porto Rica and the Philippines, and also to all other countries belonging to the crown of Spain, and that no higher or other tonnage dues or imposts shall be levied upon said vessels and the goods carried in them, as aforesaid, than are paid by Spanish vessels and their cargoes under similar circumstances.

2. On the above conditions the President of the United States shall at once issue a proclamation declaring that these discriminating tonnage dues and imposts in the United States are suspended and discontinued as regards Spanish vessels and produce, manufactures or merchandise imported into the United States proceeding from Spain, from the aforesaid possessions and from the Philippine Islands, and also from all other countries belonging to the crown of Spain, or from any foreign country.

This protocol of an agreement is offered by the Government of Spain and accepted by that of the United States as a full and satisfactory notification of the facts above recited.

3. The United States Minister at Madrid will be authorized to negotiate with the Minister for Foreign Affairs, either by an agreement or treaty, so as to place the commercial relations between the United States and Spain on a permanent footing advantageous to both countries.

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Congressman Morrow, of San Francisco, has forwarded a letter to the Department of State relative to the murder of Leon Baldwin, superintendent of mines owned by an American company in the State of Durango. Baldwin was killed by Mexican bandits. Mr. Morrow says: "I respectfully suggest that our government take some decided and effective measures to secure protection for the life and property of American citizens in Mexico. I commend the case to the State Department as one that should receive careful attention and a demand for redress from the Mexican Government. The widow of Baldwin is the granddaughter of Francis Scott Key, and is left without support."

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The report having become widely circulated in Greece that laborers are in great demand in America and that money is easily obtained there, the United States consul at Athens is kept busy attending to the applications of young men seeking transportation, which they have also been informed the United States Government furnishes free. The consul has not yet been able to discover the origin of the false reports.

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A majority of the Utah Commission have submitted their annual report to the Secretary of the Interior. Messrs. Carlton and McClermand, of the commission, differing with regard to many of the views in the report, have withheld their signatures. The report states that there has been a gain of 60,000 in the population since 1880, and the prosperity of the past seven years has been equal to that of any former period. On April 1 of the present year the Mormon population in the Territories of Utah, Idaho, Arizona, Wyoming, New Mexico and the States of Colorado and California was 162,383. The number of children under eight years of age was 46,684. The church teaches its members not to enter the Territorial courts and has provided courts within the church for the settlement of their difficulties. The payment of tithing for the support of the church is vigorously urged as a religious duty. The tithings for 1880 amounted to \$540,000. The building of Salt Lake Temple, begun in 1853, has already cost millions of dollars, and will not be finished for years to come. The people stand to day where they stood when they first entered the Territory, not yielding a point, claiming all the while that they have been persecuted. Since



the passage of the Edmunds law in 1882 541 persons have been indicted for unlawful cohabitation, and 289 have been convicted. The number convicted of polygamy was 14. In conclusion the report says that the Edmunds law has been very beneficial to the Territory. The minority report will contain, it is said, a recommendation favoring an amendment to the Constitution of the United States prohibiting polygamy in all the States, Territories and other places under the jurisdiction of the United States Government.

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The amount of capital and capital stock of new enterprises organized in the South during the first nine months of 1887 aggregates the sum of \$212,455,000. The railroad mileage of the South has been increased by the addition of over 15,000 miles since 1879. Since that year over \$600,000,000 have been spent in building new roads and improving old ones. The assessed value of property has increased over \$1,000,000,000 since 1879. This does not show the full increase in the value of property, as there is a very large amount of manufacturing property created since 1879 which does not appear in the tax assessments, being exempt by law from taxation. In 1880 the South made 397,301 tons of pig-iron, and in 1885 712,835 tons, a gain of 315,534 tons. In the South alone was there any gain of pig-iron in 1885 as compared with 1880, the rest of the country showing a falling off. In 1880, 6,048,571 tons of coal were mined in the South, and in 1886 the output was 13,852,713 tons, an increase of over 100 per cent. Cotton mills have increased from 180, with 15,222 looms and 713,989 spindles, in 1880, to about 370 mills, with nearly 30,000 looms and 1,500,000 spindles. In 1880 there were 40 cotton-seed oil mills in the South; now there are 150, with over \$10,000,000 invested. The South produces \$700,000,000 a year of agricultural products. Cotton alone, since 1879-80, has sold for \$2,500,000,000, or an average of \$300,000,000 a year.

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The special report of Commissioner Okie relative to the Immigration Commission at New York is said to recommend a radical change in the methods of conducting immigration affairs at Castle Garden. The subject is now under consideration by the Treasury officials, who will act upon it in a short time. Much dissatisfaction is expressed over the present condition of affairs, and the Treasury Department is disposed to abrogate the contract with the present commission.

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The parcel-post convention between the United States and Jamaica, signed by the Postmaster-General and the Governor of Jamaica, went into effect on October 1. The provisions of this treaty relate only to merchandise parcels, and do not affect the arrangements now existing under the Universal Postal Union convention. By this new treaty all kinds of merchandise parcels that are admitted to the mails of either country up to eleven pounds, and with the greatest length two feet and girth four feet, are permitted in the mails exchanged under this arrangement. The rate of postage for parcels not exceeding one pound is twelve cents, and for each additional or fractional pound twelve cents.

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Up to 12 o'clock October 8, the last day allowed by the Treasury Department circular for the purchase of bonds, the aggregate of the whole purchase was \$13,323,550, of which \$221,200 was purchased on that day. This left about \$676,450 to be purchased to make up the amount necessary for the sinking fund. The financial condition has greatly improved since the inauguration of the bond-purchasing policy of the department, and there is now very little heard about the tight money market.

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The Treasury statement for the month of September shows that there has been a decrease of \$954,526 in the circulation of national bank notes and an increase in the circulation of gold coin, standard silver dollars, subsidiary silver, gold and silver certificates and United States notes, aggregating \$33,304,901. There was an increase of \$7,264,136 in the amount of cash in the Treasury. The increase of circulation was largely in gold coin, which increased \$9,540,634 during the month. The total circulation of all moneys on October 1 was \$1,353,485,690.

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The decrease of the public debt last month was \$14,247,969.80.

The total cash in the Treasury is \$478,806,512.40; of this amount \$275,000,000 in round numbers is available for the reduction of the public debt, \$1,000,000 is a reserve fund for the redemption of United States notes and \$33,000,000 represents certificates held for cash.

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There have been few appointments made in the various departments of the government during the past month. The following are those in the consular and diplomatic service: Richard W. Dunlap to be United States consul at Stratford, Ont.; Charles S. Hartwell to be marshal of the consular court at Tient-Tsin, China; Alex. R. Webb to be United States consul at Manila; Thos. A. Roberson to be consular agent at Fuerth, Bavaria.

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Under date of Leghorn, Italy, August 31, Rear-Admiral Jas. A. Greer reports that he relieved Rear-Admiral Franklin of the command of the European station on August 24. His personal staff consists of Capt. John Dewey, chief of staff; Lieut. J. T. Merrill, secretary; Lieut. N. Sargent, flag lieutenant. The admiral proposed to sail in the flag-ship Pensacola, on September 1, for Gibraltar via Marseilles, Barcelona, Valencia and Malaga, arriving there about September 24. The Quinnebaug was directed to join the flag-ship at Gibraltar, and with her will proceed to the East, visiting Tangiers, Algiers, Alexandria, Joffa, Beirut and Smyrna, where they expect to arrive about November 6. From the latter port, should he succeed in securing a firman, Admiral Greer intends to go on the Quinnebaug to Constantinople; to leave Smyrna about November 26 for Genoa. The Quinnebaug will be left in the East, with headquarters at Smyrna. The health of the squadron is excellent. Under date of Paita, Peru, Commander Graham, of the United States steamship Alert, reports his arrival at that port on August 22, having left Callao on the 17th.

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In a report to the Navy Department Rear-Admiral Chandler, commanding the Asiatic station, reports the following disposition of the vessels of the squadron on August 29: The Monocacy was at Yokohama, for repairs; the Pallas was at Nagasaki; the Essex arrived at Chemulpo August 25, relieving the Omaha, which repaired to Nagasaki. The Marion was to sail from Yokohama for Panama September 1, and the flag-ship Brooklyn was to leave the same port August 30 for Chemulpo, Corea and Chefoo. The health of the squadron was good and affairs in the East quiet at the date of report.

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Commander B. F. Day, commanding the Mohican, reports to the Navy Department from Callao, September 3, that the Iroquois was expected to be ready for sea by the middle of the month, when she would proceed to the northward, with instructions to reach Paita by October 1. The Mohican would go to Paita the first part of October, and upon arrival, unless sickness renders it inadvisable, one or more of the vessels will proceed to that port. He intended reaching Panama soon after the 1st of November, in order to send home men who go to the Atlantic Coast for discharge and receive others in their place. Under date of September 8 Commander Day reported the receipt of instructions from the Secretary of the Navy to go with the Mohican to Honolulu, and intended sailing September 11, expecting to arrive at Honolulu from the 15th to 20th of October.

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Rear-Admiral D. L. Braine reports to the Navy Department from Rio de Janeiro, August 31, that the vessels of the South Atlantic squadron spent the month of August at Rio de Janeiro, Brazil, except ten days spent in fleet exercises at Ilha Grande. The Lancaster was then awaiting the arrival of the Trenton with relief officers and men. As soon as a surgeon could be procured from the Trenton the Alliance would sail for Bahia and Pernambuco. The Tallapoosa, then in dry dock, was shortly to be ordered to visit Catharino, Brazil, and certain ports in the Uruguayan and Argentine Republics. The health of the squadron was good. In another letter of the same date Admiral Braine gives an account of the squadron exercise drill and target practice at Ilha Grande, about the middle of August. The Trenton had arrived at St. Vincent, Cape de Verd Islands, on the 10th of August, and was expected to reach Rio de Janeiro by September 5.

M.



## Engineering and Machinery.

### Universal Power Boring-Machine, &c.

THE accompanying cut illustrates what is known as the Universal power boring-machine and screw-driver, manufactured by M. C.

Henley. This machine is arranged for driving screws, boring holes in woodwork or drilling in iron, as may be desired; it is perfectly adjustable and can be moved from side to side, backward or forward, up or down, as desired; it works equally well at any angle, the bit or drill always at rest, and can be placed at any given point or in slot in screw, and when all is ready the operator presses on the hand-piece at top or moves the small eccentric lever forward, thus bringing the two friction-wheels together, one of which is made of paper and the other of iron, and forcing the screw in, or bore or drill, as required.

This machine will be found constantly useful in chair, coffin, carriage, toy, sash and door, agricultural, and, in fact, all manufacturing establishments and factories where rapid work is required, such as boring, drilling, driving screws and screwing on small nuts. It will readily do the work of four men.

### Making and Transferring Pig Metal.

THE usual plan of casting iron into pigs and transporting it to a place of deposit involves, it is well known, a great deal of hard labor, and to obviate this and introduce a more perfect system is the object of a new and ingenious and efficient apparatus which has been recently patented. The operation of this system is as follows: At a short distance from the top hole of a cupola or blast furnace is arranged an iron casing or bed, in which is held pig-metal carriers, provided with a number of transverse brick chills or molds, which open at one end into a longitudinal brick trough held in a suitable metal casing and pivoted to the stationary bed or casing and extending on one side. The trough is somewhat higher than the series of chills, so that when the molten metal is run from a cupola or blast furnace into it, the metal will run thence into the series of chills, so that when the molten metal is run from a cupola or blast furnace into it, the metal will run thence into the series of chills. The pig metal will be of less thickness at the juncture of the chills and trough, which allows of it being more readily broken when the trough is swung upward. The trough is braced by means of brackets that rest against the case, and a U-shaped frame is pivoted at the ends of the casing that can be locked over the carrier beds for the purpose of holding the pig metal within the chills, when the hinged trough is forced upward to break the pig metal at the junction of the trough and molds. After the metal has been run into the chills, and has been broken from that in the trough, the carrier beds are lifted by power from an overhead traveler and suspended. The mold or carrier is then transported to a point adjacent to a railway track, and the pig iron, having become hardened by being cooled, is dumped from the molds into a car, thus saving much labor by obviating several transfers of the metal, as is usually done, and reducing the expense of production.

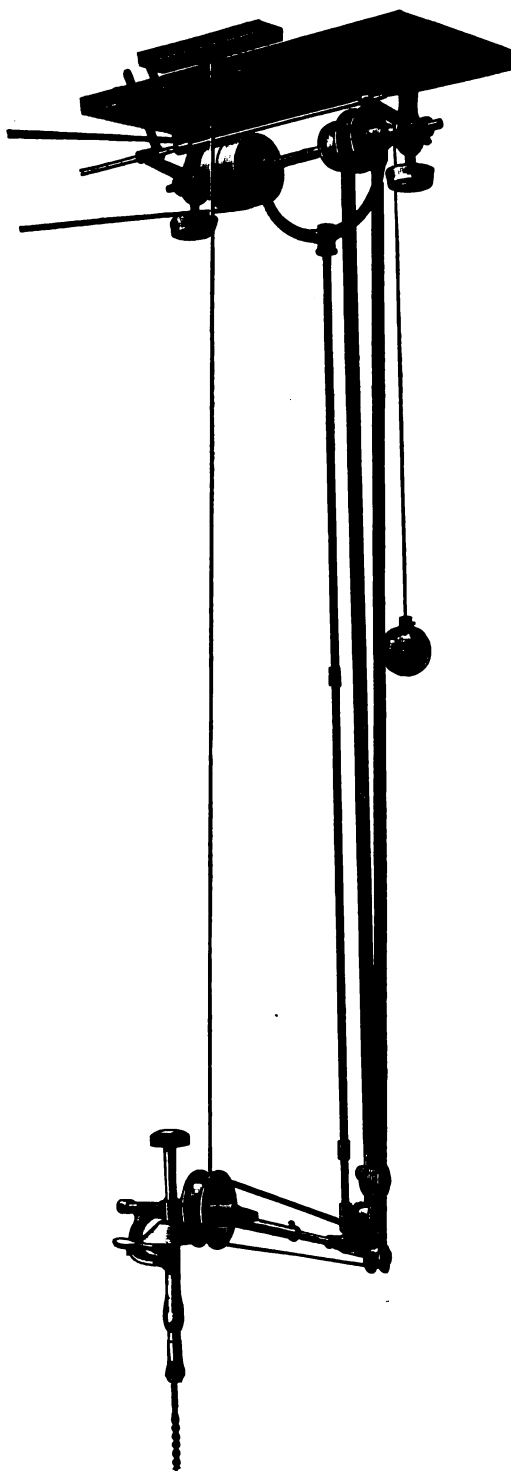
### Crushing Machine.

A NEW machine for crushing ores, phosphates, marls, corn-cobs, &c., has an annular base or foundation supported upon heavy timbers. A plate, which is secured to the foundation by bolts, is cast around the lower end of a vertical spindle that passes upward through a plate and the timbers. The upper plate is provided with a central perforation, the sides of which are rounded to permit of a rocking movement of the supporting frame and to relieve the spindle from unnecessary strain, which is occasioned when an uncrushable substance comes. There is a metallic annular trough which is about nine inches in width at its top. This trough is provided with projecting flanges, by means of which it is bolted or otherwise firmly secured to the foundation timbers. The trough has concave sides, which approach each other toward its bottom, terminating in a level bed about two inches in width, and in this bed the crushing disks, mounted upon a suitable supporting frame, revolve. This supporting frame consists essentially of cross timbers, which are provided with an opening for the spindle, thereby holding the frame in its proper position and permitting it to be easily revolved.

The timbers of the supporting frame are extended to form the levers by which to revolve the frame, while to the under side of short cross timbers are secured suitable journals for the shafts of the crushing disks. These disks have their crushing edges of varying widths, the object of which is that the wheel having the narrowest edge will cut the material, while the succeeding wheels, whose edges are of increased widths, will thoroughly crush and pulverize the material within the trough. The trough is also provided on its inner concave sides with lugs, which greatly assist in crushing the material. Should the disks meet with some uncrushable substance they would ride over it by the tilting of the frame, which is due to the peculiar shape of the plate, or else the frame would move upward on the spindle and permit the disks to clear the object, the frame and disks resuming their normal position as soon as this is done.

A SPARK-ARRESTING device, which is said to be much more effective in preventing spark throwing than anything else yet devised, has been put in use on the Chicago, Alton and St. Louis Railroad. The lower part of the front of an ordinary smoke-box is cut out, and projecting slightly into the opening so made is a triangular-shaped box, most of this box being below and in front of the smoke-box. On the inclined front of this box are two hinged valves which can be opened from the cab to admit air to the box

while running, and the same motion which opens them works a valve inside which shuts off communication with the smoke-box. Deflecting plates are so placed as to lead all sparks into this box, and it can be emptied while running, by opening the air-valves and drawing the sparks out through pipes connected to the box at the lower rear corners and running back under the fire-box. A small steam-jet is used in these pipes to counteract the effect of the smoke-box draft and to draw out the cinders when the air-valves are opened.



UNIVERSAL POWER-BORING MACHINE AND SCREW-DRIVER.



### Broom-Corn Machinery.

THE machines herewith illustrated are manufactured by G. D. Colton & Co., who have been making machinery for handling broom corn and preparing it for market for a number of years, and the machines offered by them are said to have stood the severest tests and given unqualified satisfaction in the leading broom-corn districts of the United States.

The Chain Feed Broom-Corn Scraper is just the machine needed by everyone who raises broom corn, and especially if any large amount is to be handled. It is said to clean off the seed more perfectly and with less waste of brush than any other method. The saving in this respect, to say nothing of the time gained, will soon pay for the machine. This scraper has been greatly improved and simplified. All of its parts are made with a view to durability and convenience of operation. The cylinders are geared together and are driven by one pulley, instead of the three used in the old style of scraper. This makes the machine more simple and gives greater power with less wear of belts. The drive-pulley is placed on the lower cylinder shaft, and the feed is driven by gearing connected with the same shaft. The shafts are of steel. The principal bearings are long and are filled with anti-friction metal, and provided with oil-cups, making the machine very light running and durable. The feed-table and legs can be easily taken off, if desired, for storage or shipment. With one of these scrapers from seven to ten tons of broom corn can be cleaned per day. The ease with which this unprecedented amount of work can be done greatly reduces the cost of labor and makes the machine indispensable wherever it has been used.

The Climax Baling Press is a standard and reliable machine. It excels in manner of construction, strength and durability, ease and convenience of operation, and in the compactness of the bales pressed. The bales are 3 feet 9 inches by 2 feet, and of any desired thickness from 20 inches to 42 inches, and weigh from 250 to 400 pounds. The superiority of this press is due mainly to the patented clamp which takes the place of the knuckle formerly used. This clamp or clutch is so constructed that there is no possibility of its slipping. The inside of the press-box is so arranged that the bands can be very readily adjusted. Hand-power is used in operating this press.

For planting broom corn the Double Row Drill Planter, manufactured by this company, is said to be the most satisfactory means in use.

Parties interested in broom-corn raising and shipping, and in the manufacture of brooms, will do well to write for circulars and further information.

AMONG late inventions is an electrical attachment for railway engines, which is so arranged that an individual at the side of the track or at a railway station may set in operation certain devices fixed upon the engine, and thus attract the attention of the engineer or driver, and thereby bring into action a very effective system of danger signals.

### Air-Compressor Attachment for Locomotives.

AN air-compressor attachment for locomotives in which the main cylinders can be used whenever it is desirable for compressing air to operate the brakes, or for any other desired purpose, consists of a pipe connecting the steam chest or cylinder with the air-reservoir, and suitable cocks by which communication may be made and cut off at will, together with check and safety valve and operating rod.

This invention is of especial value upon roads where there are heavy grades, as the operation is conducted so much more rapidly than with the ordinary air-pump that at a speed of twenty miles per hour, with a four-foot eight-inch wheel, and eighteen by twenty-four inch cylinder, it will charge the train 100 times quicker than with the air-pump commonly in use. It is easily applied to any engine, and is at command at all times; and being easily and quickly put in operation the danger of accident is much less than with the ordinary air-pump. Its cost per engine is scarcely of consequence. It needs no repairs, and saves running the air-pump at a high rate of speed, which has to be done on down grades with heavy trains, when that is the only supply. Then, when the air-pressure becomes low, a train can be charged with this apparatus in a few seconds, and the air-pump may be run at a moderate rate of speed, which saves

repairs and the liability of the pump-packing burning out. There is an assurance of a supply of compressed air on any train, the engine coupled thereto being equipped with this apparatus.

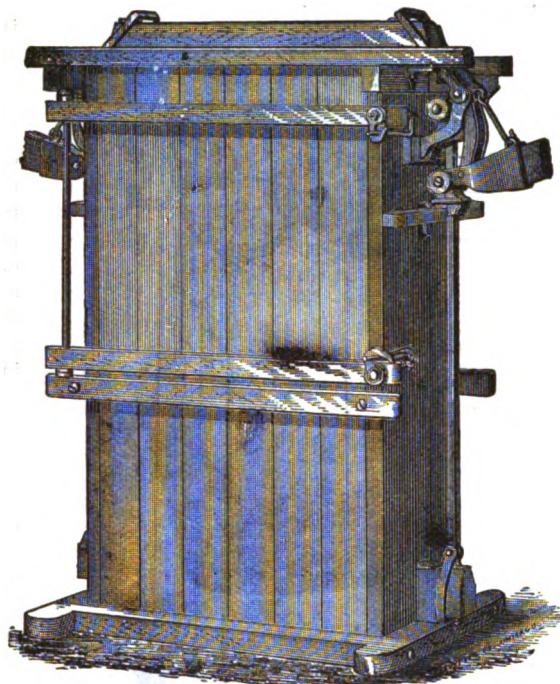
Its operation is as follows: When it is necessary to force air back to the air brakes under a train of cars which are coupled to the engine, the steam being shut off from the cylinders, a valve, which is under control of the engineer, is opened, and the valve gear of the engine

being reversed to a point slightly back of half stroke, the piston of the main cylinders will draw air into the cylinders through the exhaust pipes (which can be connected with the exterior air, if desired), and will force it through the steam-chest into the air drum or reservoir, until any desired pressure has been produced; and from the air-reservoir the air is conducted through the ordinary pipes beneath the train, so as to operate the brakes as occasion may require. This device may be used at any time when the

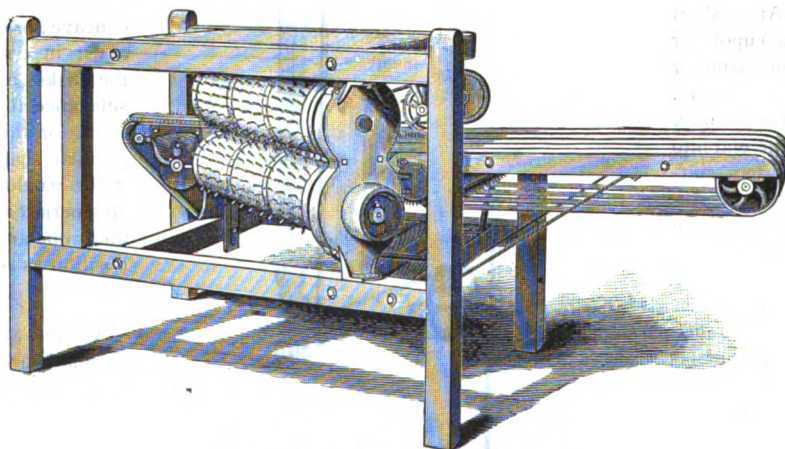
train is under sufficient headway, and from the size of the cylinders it will pump air to a high pressure in a very few strokes.

This device has been in use on several divisions of the Southern Pacific Company during the past eighteen months, and has, it is said, never once failed to do what was expected of it.

AN automatic chuck for all kinds of brass work, such as steam, water, clock and watch works, has been recently put upon the market. This chuck is intended to take the place of spring chucks, and will grip from the smallest holds up to five tons without friction, being very economical. It has a sliding chuck-head operated by hand or treadle, with springs for opening and closing the jaws, and is said to operate successfully.



"CLIMAX" BALING PRESS.



CHAIN-FEED BROOM-CORN SCRAPER.



## Hardware.

### Cigar-Makers' Tools.

EVERY industry must have its specific tools and invention does not limit itself to any particular line of manufacture. The art of making cigars by hand has been supplemented by various tools, all adapted to assist and economize in the production. In the accompanying illustrations will be found the designs of two appliances made by the Moeller & Aschermann Manufacturing Company. The one is a flexible creaseless cigar mold, which has features distinctively its own and which, it is claimed, make it superior for the uses to which it is to be applied. The other is a patent cylindrical cigar shaper, which is said to be a valuable implement for the purpose. It is asserted that cigars manufactured with the assistance of this shaper cannot be distinguished from hand-made work, as it gives them a fine, uniform appearance, and makes them unexcelled for smoking qualities, flexibility and handling; they have not the molded, stiff, wood-like appearance that other molds produce. No crease will be visible, on account of the flexible, thin-edged construction of the upper cup; the turning of bunches is positively abolished; the bunches remain moist, and have no chance to bulge up (as in an ordinary shaper, when twenty bunches are exposed before they are wrapped). Each form in the cylinder contains a bunch, having its separate clasp, and is only removed from the shaper after the wrapper is cut and ready to put on the bunch. The wrappers do not break or loosen from the bunch or get brittle when dry but hug to the bunch, and contract or expand, according to the changes of weather, the same as hand-made work. The pressing of the bunches can be easily regulated to any desired pressure, without the least fear that the free smoking of the cigars will be injured thereby. This cigar shaper is strong and very substantially built of the best material; it is small in size, convenient to the workman and is a great saving to the manufacturer, as only one cylinder is necessary for each shape, instead of a great number of block molds. One of the most important points is that the edges do not bend, or otherwise press out of shape, nor can the edges break.

The company named also makes other tools for cigar makers and tobacconists.

### Herramientas de Cigarrero.

APENAS hay industria que no pueda con buen éxito servirse de mecanismos que economicen el trabajo manual y aunque éste para la manipulación que se trate de llevar á cabo quede indispensable, se puede aplicar algún aparato que facilite la fabricación. Tampoco se han descuidado inventos que ayuden á los cigarreros con tal motivo. Lo demuestran además los adjuntos grabados. Uno de éstos representa la llamada máquina de comprimir tabácos cilíndricamente patente de Elges y el otro el molde flexible sin pliegue. Fabrica ambos la compañía manufacturera the Moeller & Aschermann Manufacturing Company. Ambas herramientas son sumamente eficaces, puesto que no solo reducen el costo de fabricación, sino dan á los tabacos un primoroso acabado. La flexibilidad de los moldes previene el que se formen pliegues; el tabaco sale del molde teniendo un exterior

absolutamente perfecto en su uniformidad, lo que es un atractivo para el comprador.

La compañía á que referimos fabrica toda clase de moldes de una infinidad de formas; además toda especie de herramientas de cigarrero y asimismo gran variedad de enseres de tabaquero.

### Geräthe für Cigarrenmacher.

ES giebt wenige Erwerbszweige, bei denen Arbeit ersparende Vorkehrungen nicht Verwendung finden und weun man dabei die Handarbeit auch nicht gänzlich entbehren kann, so kann sie doch durch irgend eine mechanische Vorrichtung erleichtert und die Herstellung des Fabrikats beschleunigt werden. Cigarrenmacher sind denn auch nicht übersehen worden in der Verwendung solcher Hilfsmittel. Beikommende Holzschnitte veranschaulichen dieses auch zur Genüge. Der eine stellt die sogenannte Cigarrenformirungs Maschine und die andere die geschmeidige, faltenlose cigarrenform dar. Beide sind das Fa-

brikat der Moeller & Aschermann Manufacturing Company. Diese Geräthschaften verrichten von ihnen erwartete Arbeit auf das Wirksamste. Während sie die Herstellung von Cigarren verbilligen, geben sie letzteren ein schönes ansehen. Die Geschmeidigkeit der Formen verhindert die Bildung von irgend Falten auf derselben, vielmehr erhält sie ein hübsches, ebenmässiges Äussere, welches Anziehungskraft auf den Käufer ausübt. Die genaunte Fabrikgesellschaft verfertigt alle mögliche Arten und Gestalten von Formen, wie ferner auch alle erdenkliche Cigarrenmacher—Geräthe und Handhaben für Tabacks fabrikanten. Die Formirungsmaschine ist stark und vom besten Material solide gebaut, dabei Klein und Compact, also leicht zu handhaben.

### A New Revolver.

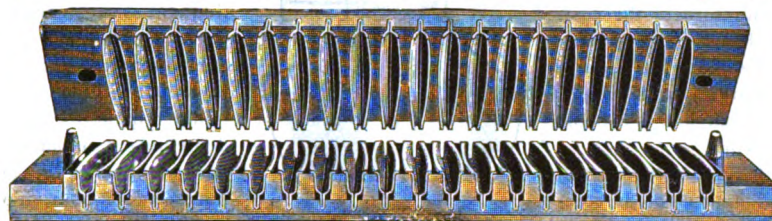
A RECENT improvement in repeating firearms is known as the patent safety-hammer double-action revolver, which is, as its name implies, designed to furnish a pocket revolver with a hammer of such convenient form as to obviate the danger of accidental discharge when inserting in or withdrawing from the pocket. This re-

sult is attained by omitting the usual cocking projection on the hammer, leaving the external portion of the hammer to correspond in symmetrical outline nearly to that of the lock-frame contiguous thereto. The upper end of the hammer when it is set in the frame is neatly rounded over and checked.

The hammer is usually raised and the pistol discharged by the trigger action, but it may be raised to full cock, when it is desired to take deliberate aim, by the thumb, as with an ordinary revolver, but it is suggested that it will be found more convenient to raise it to the first notch by pressing the trigger and completing the cocking with the thumb. A sufficient hold is afforded on the checked portion of the hammer in connection with the recess at the top of the lock-frame to admit of its being let down by hand in the usual manner.

The special advantages secured in this improvement are referred to as the following:

That there is no danger of accidental discharge by catching the hammer; that the revolver can be inserted or quickly withdrawn from the pocket with exceptional ease, and that these features are secured without adding to the number of parts. It is made in three calibres, 32, 38 and 44.



CIGAR MOLD.



CYLINDRICAL CIGAR SHAPER.

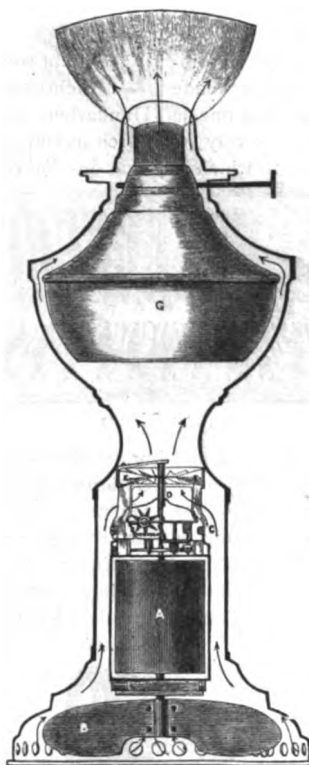


### The Hitchcock Lamp.

THE Hitchcock Lamp Company is manufacturing a kerosene lamp of peculiar structure, which does not require the use of a globe or chimney, or any substitute for either, and which emits no smoke nor odor. This lamp, which was invented by Robert Hitchcock several years ago, is mechanical, combustion being created by a fan which is driven by a clockwork movement concealed in the base, and wound up by means of a key attached to the works. This clockwork, when once wound up, drives the fan noiselessly and forces the air into the flame, thus causing the latter to yield a brilliant, steady, white light of a power equal to that yielded by a six-foot gas burner, and at one-third of the cost. The lamp gives much more light than a chimney lamp using the same size of wick. Its flame has none of the indistinctness observed in that of other lamps, makes no shadow on the ceiling or wall, and is capable of withstanding a sudden blast of wind.

The lamp consumes less oil than other lamps, will burn in a very warm or very cold apartment, is compact, light and portable, and, as it is composed entirely of metal, it cannot explode. Upsetting will neither break it nor spill its contents. As the oil-reservoir is surrounded by a blast of air, it is kept cool, protected against dust, charred wick, snuff balls and burned matches, and gives great uniformity and steadiness to the volume of light through many hours' burning. The lamp, as a whole, is so well and strongly constructed that it cannot get out of order. It has withstood the wear and tear, shaking, dust and grit, and violent use on railroads and ships for years.

The structure of this lamp will perhaps be better understood by an examination of the sectional view given in connection with other illustrations. A indicates the clockwork, which runs ten hours when fully wound up, and which through a series of gear wheels actuates the fan, E E, which delivers a constant current of air in the direction shown by the arrows. This air circulates around the oil-chamber G and keeps it cool, and in its upward course impinges upon the flame H on passing through the burner. By this means, the flame is suffi-



HITCHCOCK LAMP—IN SECTION.

### La Lampe Système Hitchcock.

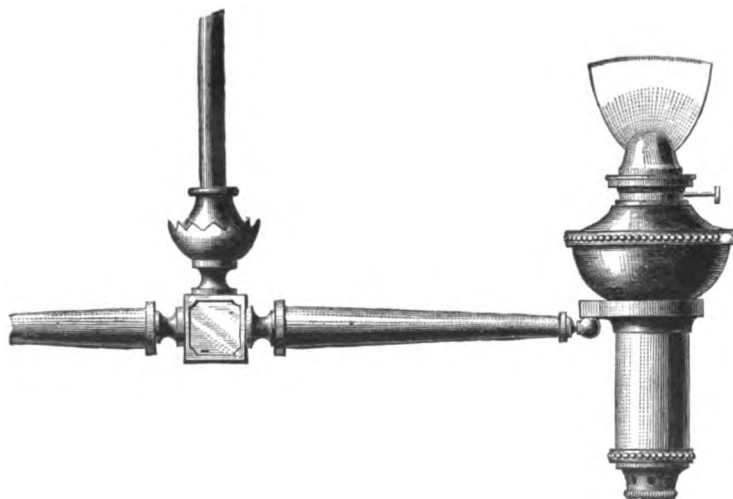
LA lampe système Hitchcock que nous illustrons sur cette page n'est pourvue ni de coupole, ni de tuyau ; elle brûle sans fumée en même temps qu'elle est inodore et absolument sans danger. La combustion se crée au moyen d'un éventail que tourne un mouvement d'horloge caché au fond de la lampe. On se sert pour monter ce mouvement d'une clef y attachée, et aussitôt que le mouvement commence à fonctionner, l'éventail tourne sans que l'un aperçoive le moindre bruit, l'air est forcé dans la flamme, dont la lumière est d'un beau blanc argenté, qui continuera à briller pendant à peu près dix heures dès le moment que le mouvement fonctionnera et sans exiger l'abri d'un tuyau. Ceci n'empêche pas que ceux qui voudraient couronner la lampe d'un abri ou d'une coupole le fassent. Cette lampe rayonne une lumière brillante, ne consommant qu'une minime quantité de pétrole. Si la lampe est accidentellement culbutée elle ne se cassera pas et il n'y aura non plus de coulage. On peut y apporter quelques modifications pour qu'on puisse se servir comme combustible d'huiles plus épaisses que le pétrole raffiné. Le Gouvernement des Etats-Unis a ordonné dans le temps bon nombre de lampes de ce système ainsi transformées et s'en sert encore aujourd'hui sur une grande échelle. On trouvera dans une autre colonne l'annonce de la fabrique de ce genre de lampes, "The Hitchcock Lamp Company."

### Lámpara Patente de Hitchcock.

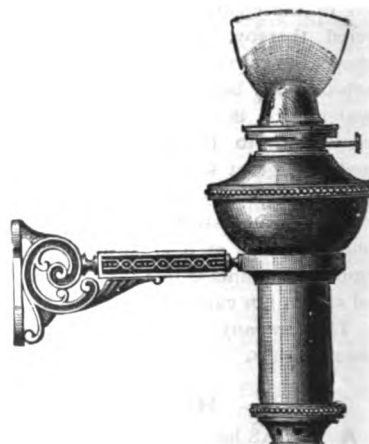
LA lámpara patente de Hitchcock que ilustramos no tiene globo, ni tampoco tubo, y sin embargo arde sin echar humo ni olor y todo aquello sin que haya el menor peligro, fomentando la combustión un abanico que gira por medio de un movimiento de reloj, escondido en la base de la lámpara, á que se da cuerda con una llave asegurada al movimiento. Luego, tan pronto como se haya dado cuerda al mecanismo, gira silenciosamente el abanico, forzando al aire á que penetre en la llama, con lo que se produce una hermosa luz blanca como la plata—una vez que se le haya dado cuerda—durante poco más ó ménos diez horas, sin que haya



HOUSE LAMP.



LAMP ATTACHED TO CHANDELIER OR GAS FIXTURE.



BRACKET LAMP.

ciently oxygenated to emit the fullest volume of light and give tinted fabrics their proper appearance. The Hitchcock lamp is fitted up for burning heavy oils, and has been adopted as the best illuminating device known for sleeping and drawing-room cars on most of the large American railroads. The United States Government has many lamps of this kind in service in the army and navy and other departments.

The Hitchcock Lamp Company gives special attention to orders from foreign countries, and catalogues and price-lists will be promptly mailed to those who request them, or orders may be sent through New York export commission houses.

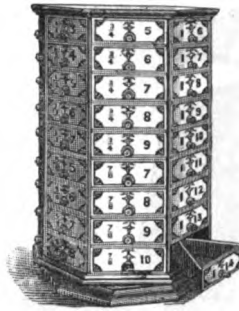
necesidad de tubo. No impide que los que deseen darle abrigo le metan globos. La luz que da es brillante y clara ; es poca la cantidad de petróleo que consume. Si vuelca por casualidad no derrama el petróleo que contenga, ni tampoco puede romperse. Bastan algunas modificaciones de poca entidad para que se usen para combustible petróleos ó aceites más pesados, teniendo en uso el gobierno de los Estados Unidos cantidad de lámparas de esta patente arreglados á propósito para esa clase de combustible. Llamamos la atención hácia el anuncio de la casa manufacturera de ella en otra parte de este periódico. Si se toman en consideración las ventajas que presta esa



clase de lámparas, hay que admitir que es uno de los más útiles inventos desde hace tiempo en los Estados Unidos ó cualquier otro país.

### Die Hitchcock Lampe.

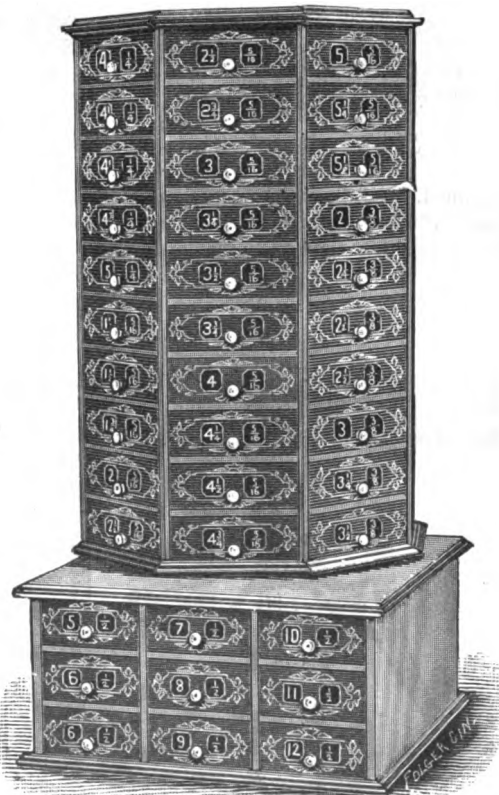
**D**IE Hitchcock Lampe, welche wir hiermit durch einen Holzschnitt bildlich darstellen, bedarf weder einer Kuppel, noch einer Röhre; sie brennt rauch- und geruchlos und ist dabei vollkommen gefahrlos. Die Verbrennung geht vor sich indem eine fächerartige Vorkehrung durch ein im Boden der Lampe angebrachtes Uhrwerk getrieben wird, welches man mittelst eines am Gehäuse befestigten Schlüssels aufzieht. Ist das Uhrwerk einmal aufgezogen, so dreht sich der Fächer geräuschlos, treibt die Luft in die Flamme und es entsteht alsdann ein schönes silberweißes Licht, welches ungefähr zehn Stunden fortfährt, zu brennen, wenn das Werk einmal in Bewegung gebracht worden ist, weshalb man auch keiner Röhre bedarf. Wünscht man dennoch Gläser oder Kuppeln zu gebrauchen, so mag man es gerne thun. Diese Lampe spendet ein glänzendes Licht und verzehrt nur wenig Oel. Stösst man sie zufälliger Weise um, so wird kein Oel verschüttet, noch zerbricht sie. Wünscht man sie zum Verbrennen von schwererem Oel eingerichtet, so kann solches ebenfalls geschehen, wie denn auch die Vereinigte Staaten Regierung Lampen dieser Art massenhaft verwendet. Fabrikantin dieser Lampe ist die Hitchcock Lamp Company, auf deren Anzeige in einer anderen Spalte dieses Blattes wir verweisen.



SCREW CASE.

### Bolt and Screw Cases.

**H**ARDWARE merchants will appreciate the advantages which the bolt and screw cases manufactured by the American Bolt and Screw Case Company afford. These cases, two of which are illustrated, are made with iron standards, screwed firmly into an iron hub in the bottom, which makes them perfectly true and solid. The tops and bottoms are double, with the grain of the wood crossed, glued and screwed together, and braced with iron rods, which bind the whole firmly together; the cases are thus made strong enough to bear three times the weight that can be put into them, and they revolve perfectly true and easy. Both bolt and screw cases are made of the best seasoned Tennessee poplar, finished in imitation of cherry. The fronts of drawers are made of the best Norway pine, with the sizes which they contain nicely printed on, making them at once desirable appendages to hardware stores. Any merchant who handles bolts and screws will find that these cases are eminently useful and convenient, as they prevent the mixing of screws and bolts and enable dealers to keep their stock in good shape, thereby making it a pleasure instead of a task to handle the goods. The drawers are all provided with stops to prevent their removal from the cases. Each drawer holds a package of bolts or screws of the size and number indicated on the front of the drawer. Each style of case is made in four sizes, from 33 to 42 inches in height, containing from seventy-two to ninety-six drawers, according to size. These cases are guaranteed by the manufacturer to give satisfaction.



BOLT CASE.

### Caja para Clavijas y Tornillos.

**L**OS ferreteros pueden procurarse una caja muy práctica y cómoda para pernos y tornillos acudiendo á la compañía fabril "The American Bolt and Screw Case Company" que las fabrica. La ilustramos en esta página. Está sólidamente construida y ensamblada, siendo de hierro la armadura. La serie de gavetas que tiene está convenientemente graduada para insertar los varios tamaños de aquellas

dos especies de ferretería, estando además impreso en la parte delantera de cada gaveta el tamaño para que se destina. Cada gaveta se halla provista de una aldaba que la cierra, teniendo espacio bastante para contener un paquete completo de clavijas ó tornillos del tamaño y número indicados en su frente. Una de las principales ventajas que posee esa caja es el buen orden de que muy amenudo carecen los establecimientos de ferretería. Puede suceder que el almacén éste atestado de compradores cuando. Se apreciará debidamente lo cómodo que es.

### Bankers' Safety Case.

**A** BOX in which money in the form of bills can be placed and clamped so that none can be removed without breaking the seals, and so that the contents may be seen at any time, is made of sheet metal plates, their upper edges riveted to an inner strengthening frame, while to the bottom is attached a metallic frame made of a central bar and two cross pieces, the ends of the latter being bent up and riveted to the side walls of the box. From the centre of each of these cross pieces posts extend upward within the box, the posts being threaded, and a clamping plate, apertured to fit over them, being held down upon a pile of bills, placed between the posts, by winged nuts. When the bills are so clamped, the bills being also impaled on a vertical needle screwed into the base if that be deemed necessary, a cord or ribbon is passed through the eyes of each of the nuts and tied and sealed on the clamping plate near its centre. In each of the side faces of the box are small panes of tough glass through which the bills can be plainly seen, a pointer on the clamping plate registering with a scale on one of the panels. The small figure shows the under side of the cover, which has two fixed projections that fit under one of the side lengths of the frame, and a double-armed locking bolt arranged to be thrown outward and beneath the opposite side length of the frame, the operating lever for this bolt having an upward extension and connection on which is placed one of the seals used in fastening on the address tag. The advantages of a package of this kind, requiring no keys, and to use which no combination has to be remembered, recommend its employment also for valuable papers, such as bonds, wills, &c., which are usually deposited in safes, the package affording only sufficient means of viewing its contents to obviate the danger of substituting other papers for those thus put under seal.

### Lock Coat-Hook.

**A**N ingenious and serviceable device comes in the form of a hook upon which to hang a coat or other garment, and which is provided with a locking arrangement in the form of a bar which closes down upon it and is locked in that position, thus preventing the removal of the article hanging thereon, until released by unlocking, when the bar is automatically raised by a spring. The hook is strong and durable and is self-locking. It is handsomely nickel plated, and ornamental in appearance. It is intended for securing articles in wardrobes, offices, carriages and railway cars, and by an attachment which the manufacturers can furnish the hook can be used to secure hats.

SEVERAL new electric outfits have been brought out to be handled by the hardware trade. One is designed for call and signal work; another, with floor push, is intended for summoning clerks or servants, and another is to be used as a door alarm, to signal when a door is opened. Still another is designed for an exterior door bell.



## Surgical Appliances.

### The Canton Surgical Chair.

**A**N illustration is presented of an automatic surgical chair, known as the "Canton," and manufactured by the Canton Surgical and Dental Chair Company. This chair combines the conveniences and features of an office-chair, an operating-table and examining-chair, and is designed to meet every want in the treatment of gynecological cases. It is automatic in action and is adjustable to all of the various positions necessary for examinations and operations. It is complete in itself, requiring no extra extensions or cumbersome appliances, and is so nicely constructed and adjusted that the patient's own weight furnishes the motive-power to change it to any position from the sitting to the horizontal, while a single turn of the lever fastens the stop which retains it firmly in any position desired. It is particularly adapted to the use of specialists, in the treatment of diseases of the eye, ear, throat or chest. For oculists it is provided with a specially constructed head-rest, having all the motions of the regular rest, with the addition of adjustable side-clamps, which hold the patient's head firmly in any desired position. The chair is composed of a stationary iron base and movable back, seat, leg and foot rest; handsomely upholstered in either silk or mohair plush, velvet carpet, leather or imitation leather. The larger iron parts are painted and tastefully ornamented; the smaller nickel plated.

Figure 1 represents the chair in its normal position, from which all positions are obtained, from the sitting to the horizontal, by merely reclining the back, which elevates and extends the seat and leg rest, bringing it to the position shown in Fig. 2. This movement of elevation and extension may be stopped at any angle and the chair held firmly in any position between the sitting and horizontal by turning the handle shown on the rear leg. This gives the most favorable position for examinations and operations upon the head, eye or throat. The chair is mounted on noiseless, double wheeled, anti-friction casters of the latest and most approved pattern, by means of which the operator can easily move it from place to place, as light or convenience may suggest.

Fig. 2 represents the chair as a full-length operating table, which, with the extended head-rest, is over six feet long, thirty inches high and twenty-eight inches wide, giving a position for all operations and examinations upon the trunks and extremities, and can be made to accommodate any length of patient desired. This position is employed whenever a level, table-like surface is desired. The seat and leg-rest are firmly held in this position by a pair of automatic cantilever braces, which retain the leg-rest and seat so firmly that when in the above horizontal position the end of the leg-rest will easily support a man's weight, while at the same time a like weight may be placed on the extreme end of the pronated back, without depressing either below

the common level. It will also be noticed that it brings the patient's weight directly over the base, thereby overcoming any tendency for the chair to tilt over backward.

The chair can also be converted into a three-quarters length operating-table by dropping the leg rest, and for gynecological work the seat and leg-rest are dropped and stirrups are brought into use without moving or lifting the patient.

Following is the list of positions to which this chair can be converted: Abdominal, dorsal recumbent; dorsal, with limbs flexed; extreme recumbent, gluteo dorsal; gluteo dorsal, with shoulders raised; knee chest, knee elbow, left lateral, left latero abdominal, right lateral, right latero abdominal, reclining, sitting and semi-reclining.

The Canton Surgical and Dental Chair Company claims that this combines in a single chair all of the desirable features of other chairs, tables and lounges; the patient is brought into position with the hips projecting beyond the edge of the table, without being lifted forward or moved in any manner; the head-rest, by its movements of extension and elevation, affords an unequaled appliance for operations on the eye, ear and throat; it is complete in itself, requiring no extras to be fitted and adjusted when desired for use; its head-rest has the greatest number of movements and is best adapted to a general practice; it has a greater range of action than any other chair made, with simpler mechanism and is less liable to get out of order; it works more easily and noiselessly, and the seat, when disconnected, drops more completely out of the way than in any other chair; the back, when in the horizontal position, does not require an extra leg to support it; it is the only chair in which the knee-chest position can be successfully obtained; the dorsal position can be obtained without moving the patient; it is particularly well adapted to the use of specialists; it is not liable to be overturned in any operation.

—:o:—

### La Silla de Operaciones Modelo "Canton."

**L**AMAMOS la atención sobre el adjunto grabado que ilustra una silla de operaciones fabricada por la compañía fabril the Canton Surgical and Dental Chair Company. Es silla que une la comodidad de una elegante silla de oficina á las de una mesa de operaciones y silla de examinar. Se construye con el objeto especial de llenar todos los requisitos y responder á to-

das las exigencias que puedan tener en la práctica el cirujano para operaciones de hombres y mujeres, el oculista y aurista, adaptándose fácilmente á cualquier posición en que se coloque el cuerpo humano. Obra automáticamente, estando arreglado todas las piezas que la componen de tal manera que funcionen armoniosamente ó por separado. Se logran rápidamente todas las posiciones que se necesiten sin estorbo innecesario para el enfermo y operador. En cuanto se trate de investigaciones por medio del espéculo, es silla en que el enfermo queda cómodamente recostado, mientras que el operador tiene tanta facilidad para cambiar las posiciones de la persona que padece, que hasta



CANTON SURGICAL CHAIR—FIG. 1.



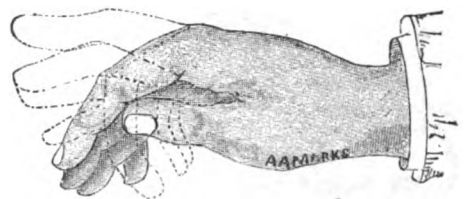
CANTON SURGICAL CHAIR—FIG. 2.



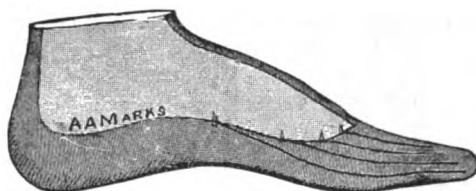
en las operaciones á que se someten las mujeres desaparecen las usuales perplejidades y molestias. La silla á que se refiere está construida de tal manera que es absolutamente completa y no necesita extensiones, ni tampoco aplicaciones embarazosas. Se adapta especialmente para uso de los especialistas en el tratamiento de enfermedades del ojo, de la oreja, garganta y pecho. Figura 1 representa la silla modelo "Canton" en su posición normal, desde la cual se tras-

forma en todas las posiciones que se descen.

Para cambiar la posición de la persona sentada á la horizontal, todo lo que hay que hacer es inclinar el respaldo de la silla hácia atrás, con lo que se levanta el asiento y la pieza donde descansan las piernas y se obtiene la posición que muestra la Fig. 2. Fig. 2 representa la silla modelo "Canton" trasformada en mesa de operaciones en toda su longitud la cual, con su apoyo de cabeza mide más de 6 piés, con treinta pulgadas de alto y veinte y ocho pulgadas de ancho, de lo que resulta una posición propia para todas las operaciones que se necesiten y asimismo para poder examinar el tronco y las extremidades y dar toda la longitud á la silla que para su comodidad desee el enfermo. Efectivamente se pueden cambiar las posiciones de la silla hasta producir más de quince diferentes para las operaciones que pueda haber. No está sujeta á volcarse repentinamente.



No. 1.



No. 2.

"The danger of a city and country life are about even," said the manufacturer; "the mowing-machine is about as destructive as the horse-car."

The manufacture of artificial limbs has reached a high state of perfection in the United States, and few people would imagine that persons who are met with almost daily in our streets are supplied with artificial legs, in some instances both of those members being gone.

Among the manufacturers of artificial limbs who has gained reputation is A. A. Marks, and the accompanying illustrations will give an idea of his products. Mr. Marks makes artificial hands and feet of rubber of a spongy, light and elastic character, the foot having a core of willow; two of the illustrations, Figures 1 and 2, show the designs of these. In the three illustrations of legs, Fig. 3 represents a full length leg standing erect; Fig. 4 shows a leg to be applied where there has been amputation below the knee-joint, and Fig. 5 a knee-bearing leg which is to be applied where the amputation below the knee is so short that the knee-joint cannot be used in walking. In the artificial arms the same general features of adaptability are observed. These inventions have caused a great change for the better in the appearance as well as usefulness of those who have lost natural limbs, and afford great relief to the maimed.

### Artificial Legs and Arms.

RECENT statistics show that the proportion of individuals who are pieced out with artificial legs and arms is about one in twelve thousand of the population. Of these about 25 to 30 per cent. are women, and of limbs lost legs seem to have the worst luck, they representing about 75 per cent. of the total loss.

The improvements in this class of goods have been very great within the last few years. Men and women can eat and drink, play the violin, write and do various kinds of light work, dance, skate and run with artificial legs and arms, and the rest of the world be none the wiser.

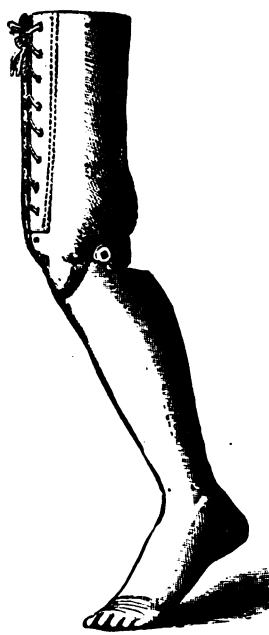
Many are under the impression that the war is answerable for most of the havoc, but the fact is that the railroads or some similar contrivance are the chief cause. The railroads are probably answerable for one-half of all the cases. "Not long ago," said a manufacturer, "I remember a customer coming to me for his second artificial leg; he had worn the first for a number of years, and had become somewhat attached to it; but he was about to be married, and it seemed to him advisable to have a new one. But he was in some doubt and no little anxiety as to whether it were better to inform his wife of his condition before or after marriage. I advised him by all means to make the fact known to her before, as she might have the marriage annulled on the ground of deception. He followed my advice, and the lady answered that she loved him none the less for his misfortune. Another strange case was that of a man who had lost his leg in a railway accident and had his cork leg broken in a railroad collision a few months afterward.



No. 3.



No. 4.



No. 5.

### Invalid Bed.

A NEW bed for invalids is constructed with a hinged head section which is raised and lowered by means of a cord passing over a crane at the top of the head-board. There are weights in the back of the head-board, which counterbalance the patient's head and shoulders, and by pulling slightly on the cord he can adjust himself to any desired position. A canvas stretcher, of canvas strips, extends across the main frame and supports the patient's body when the bed is removed. Beneath the stretcher is the mattress or bed, made vertically adjustable, and which can be raised and lowered at pleasure by a simple crank movement. When drawn up closely under the strips it sustains the weight of the patient, and when it is lowered leaves him at rest upon the canvas strips, with a free circulation of air underneath, so that his back is cooled off, the sheets changed and "bed made up" without disturbing the occupant. By this cooling arrangement all bed sores may be avoided,

and where they exist may readily be cured. Special support may be given any part of the body by placing a pillow or air-cushion on the mattress, then raising it under the patient, thus removing continued pressure from sensitive parts, and affording great relief. Concealed within the bed-frame is a commode box, which, when the mattress is let down, can be slid under the patient, and he can sit up and use it in a natural position. The platform and mattress is made in sections, and can be readily converted into a complete chair. The foot-board is pivoted to the sides of the bed-frame, and can be turned up and utilized as a table, to the great benefit of the patient.



## Fancy Goods, Stationery & Paper

### Photo Frame in Metal.

MANY novelties in metal have been brought out this season, and the various designs, made up with different kinds of metals, present pleasing and artistic contrasts. Gold, silver, copper, brass, platinum and bronze in varied colors are brought into use, creating effects which are novel and taking. On this page will be found an illustration of a new and striking design for a photograph frame, which needs little comment. It is prettily executed in silver and gilt, the swinging doors opening and disclosing a place for a cabinet photograph.

### New Designs in Fibre Ware.

SOME very pretty novelties in the shape of waste-paper jars and umbrella-stands have been put upon the market. These articles, illustrations of which appear on this page, are made of the well-known indurated ware, and are seamless, waterproof, and will not break when tipped over. The waste-paper jars are nine and ten inches in diameter, while the umbrella-stands are nine inches in diameter and twenty-three inches deep. These goods are furnished in dull finish, full-finish plain, full-finish decorated and pa-crusta. The last two styles are shown in the cuts. The pa crusta finish is just out and is particularly attractive. It is a high relief, showing a great variety of designs, in all of the different metallic effects. This finish has such capabilities in the way of constantly new designs, colors, &c., that it cannot fail to become popular. The decorated styles are also very beautiful, and all of the lines are especially adapted for the stationery and art-goods trade.

### Transfer-Sheet.

THIS is a sheet composed of "tracing tissue," newspaper, cloth or other suitable substance, coated on both sides with a varnish composed of the following ingredients, viz., two parts, by measurement, of white spirit-varnish; two parts methyated spirits; one part turpentine; one part castor oil, the whole thinned down with paraffine or other mineral oil, and scented with verbena or other essential oil. The paper or cloth having its surfaces coated with the above varnish is then pressed and covered on one side with spirit-varnish and backed in the other with one or more layers of cartridge, drawing, printing or lithographic paper or other suitable strengthening material, attached by

means of starch or other adhesive material and again pressed. The surface of the sheet is then covered or faced with an "enamel" consisting of gelatine glue and glycerine, and again rolled or pressed and allowed to dry, when the enamel surface is ready to receive the picture, design or print, which may be applied in the usual manner. The sheet thus consists of an enamel face applied to a "body" or "tissue" of fine quality supported by a stronger backing.

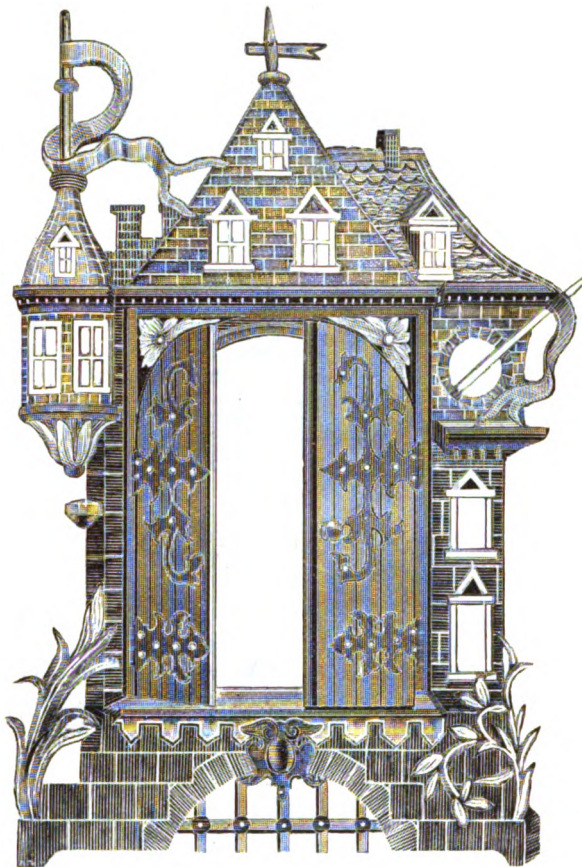
To produce a transparency the printed or ornamented face of the "material" is attached to glass by a mixture of gum and alum or other adhesive material, being well pressed thereon and all air-bubbles being removed by means of a squeegee. After the adhesive material has had time to dry—a process which usually requires about a day—the backing is moistened with glycerine and water, and, if proper care be taken, the backing and also the tracing tissue or body can be removed sheet by sheet until nothing remains upon the glass but the enameled face bearing the color or impression. When the desired degree of attenuation or transparency has been arrived at, the transferred picture may be either coated on the back with a protective varnish or it may be French polished or protected by glass.

### Calendar.

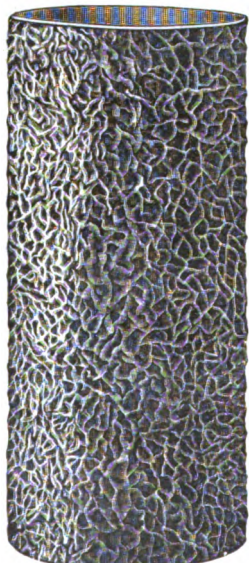
A NEW calendar is formed in sections, each section representing a month and each month again separated into days and weeks, the object being to provide a calendar with characters so arranged that the phase of the moon and duration of moonlight for any hour of the night

and for any day of the month can be ascertained at a glance. For this purpose at the intersection of each division of days, with the sections representing each hour of the night, a character is formed indicating either that the moon is visible or invisible, and, if visible, the phase of the moon, whether full, waxing or waning, as the case may be. These different stages are represented by characters rendering it possible to see at a glance the duration of moonlight and to ascertain the phase of the moon for any hour of the night and day of the month.

WINDOW transparencies are made of window glass, upon which sea mosses have been floated. The delicate colors are retained after drying, and the graceful form of the mosses is very beautiful. The glass is bound with velvet ribbon and gilt hanging-chains are attached to the upper corners. Large panes of glass with sea mosses grouped upon them are made into table screens with a back of thin colored silk.



PHOTOGRAPH FRAME.



"PA-CRUSTA" UMBRELLA-  
STAND.



WASTE-PAPER JAR.



"FULL-FINISH" UMBRELLA-  
STAND, DECORATED.



## American Industries.

### The Farrand & Votey Organ Company,

DETROIT, MICH., U. S. A.

THE fame of the American cabinet organ is world-wide, and there is no division of the inhabited globe where it has not penetrated and where its harmonies are not heard.

Prominent among the organ manufactories of the United States is that of the Farrand & Votey Organ Company, Detroit, Mich. This concern was started in February, 1881, by a few expert workmen, who formed a firm known as the Detroit Organ Company, which was conducted on the co-operative plan. They made a good organ, and in January, 1883, were bought out by the Whitney Organ Company, which was incorporated under the law of Michigan, January 1, 1884. Prominent in the organization of this company in 1883, with C. J. Whitney, an old dealer, was E. S. Votey, an enterprising young man with an inventive turn of mind, who had been for eleven years connected with the mechanical departments of Eastern factories. In October, 1883, W. R. Farrand, son of one of Detroit's oldest, most prominent and wealthy citizens, went into the company, which speedily began to expand and prosper. C. J. Whitney retired from the company on January 1, 1887, when the name of the concern was changed to the Farrand & Votey Organ Company, its present style, and its officers were elected as follows: President, W. F. Reynolds; vice-president, E. H. Flinn; treasurer, W. R. Farrand; secretary, E. S. Votey. Gen. W. F. Reynolds, the president, is a retired officer of the engineer corps of the United States Army, a graduate of West Point, a classmate of Gen. U. S. Grant and a resident of Detroit for a number of years. Elisha H. Flinn is a leading and influential member of the Detroit bar and largely interested in pine lands. W. R. Farrand was born in Detroit, his father, J. S. Farrand, having been the first president of the First National Bank and at the head of various important enterprises. For twenty years Mr. Farrand had charge of departments in the wholesale drug house of Farrand, Williams & Co. E. S. Votey was born in New York, and after an experience of eleven years in Eastern organ manufactories went to Detroit in 1883 in company with C. J. Whitney, for the purpose of embarking in business. The firm, as now organized, occupies a new factory with a new plant of improved machinery, which was put in at an expense of a great many thousand dollars.

It removed from the old factory in January, 1884, to a large five-story brick building at the corner of Eighteenth and Howard streets, but finding great facilities for its largely increased business were required it proceeded to erect the present complete factory at the intersection of Twelfth street and the Grand Trunk Railroad, into which it moved in December last. The factory is under the experienced supervision of W. D. Gray, general superintendent, who has been with the firm since it first started in business. The factory building proper, the boiler and engine rooms, dry-kilns and lumber-yards cover several acres of ground. The yards are all completely tracked for yard cars; a Grand Trunk switch track enters from the railroads, and in this respect the company has the advantage over its competitors, for three competing railroads pass directly by its factory and each road relieves it of any cartage, receiving goods for shipment at the factory doors. The main building is three stories and basement in height, with a front of 150 feet on Twelfth street

and 150 feet on the north, in the form of an L, with a depth all around of 45 feet. The engine and boiler rooms, located to the west of the main building, are 40x100 feet in area. There is also a detached oil-house to the south of the main building. All of the buildings are built of red brick, are substantial and imposing in appearance. The entire enclosure is surrounded by a neatly painted picket fence, with gates for the entrance of the cars on the smith tracks, which bring coal to the door of the furnace-room, lumber and other freight to the doors of the factory and carry away the handsomely finished organs. The business offices, draughting department and stock-room are all on the main floor, the entrance to the former being from Twelfth street. The interior of the offices and other departments mentioned are wainscoted around the sides, ceiling with gumwood, laid in lateral sections, and the floors are of the same material, the whole being beautifully polished and bringing out the fine grain of the wood with striking effect. The main factory contains upward of 50,000 square feet of floor room. The floors of each story are water and dust tight, being constructed of three inches of pine plank, caulked and pitched, like the hull of a ship; next a layer of asbestos paper and then the upper flooring of matched maple, laid diagonally. Aside from being one of the most expensive and well-built factories in the country its equipment of machinery comprises the latest improved inventions, many improvements by Mr.

Votey himself, and the facilities are complete in every department for turning out the highest class of organ work.

Before entering into a description of the interior workings of the factory and an account of the increase of the business of the Farrand & Votey Company, it may be of interest to the trade to learn that when Mr. Votey first entered the business he took with him all of his head men from Eastern factories; mechanics of many years' experience in such departments as those of actions, tuning and cases and other important lines of the business. Mr. Votey does all of the designing himself, and personally supervises the various



FARRAND & VOTEY ORGAN COMPANY'S OLD FACTORY.

improvements, while Mr. Farrand devotes his principal attention to the finances of the concern. Under the favorable conditions enumerated the business of the Farrand & Votey Organ Company has shown a steady and gratifying increase from the start. The output of organs in 1883, as shown by the books of the company, was 767 organs—an average of nearly 65 a month. The number sold crept up to 100 a month in 1884, to 175 a month in 1885 and to 250 a month in 1886. This phenomenal increase is said to be due entirely to the inherent merits of the Farrand & Votey organs, as no special efforts to push their sales were made, and the instruments introduced themselves wherever sold. With the facilities afforded by the new factory the company is now finishing and shipping 400 organs a month and expects the output to soon reach 500 a month. The capacity of the factory, as at present organized, is 600 organs a month, or 7,200 a year.

The Farrand & Votey Organ Company has an experimenting-room, where various experiments in organ improvements are constantly being made, and which, of course, are kept somewhat secret. Out of this room has recently come the "Nickel Plate," a little organ not larger than a sewing-machine, which is destined to revolutionize a certain branch of the organ trade. It was devised and originally patented by one of the employees of the company, an expert in piano and organ mechanism, who has charge of the experimenting-room. Its special features involve a doing away with the reed-board and having the reeds inside of the bellows, and the placing of an automatic swell in the place occupied by the key-slip on an ordinary organ. There are no stops. The keyboard is in



five octaves, the same as a regular organ. The tone of this little instrument is a great surprise to all who try it, and is said to be fully as powerful as that of an ordinary double-reed organ. The case is of California redwood, the ends being ornamental open-work nickel-plated castings, and the pedals of the same material. The whole closes up and packs in a convenient form for handling.

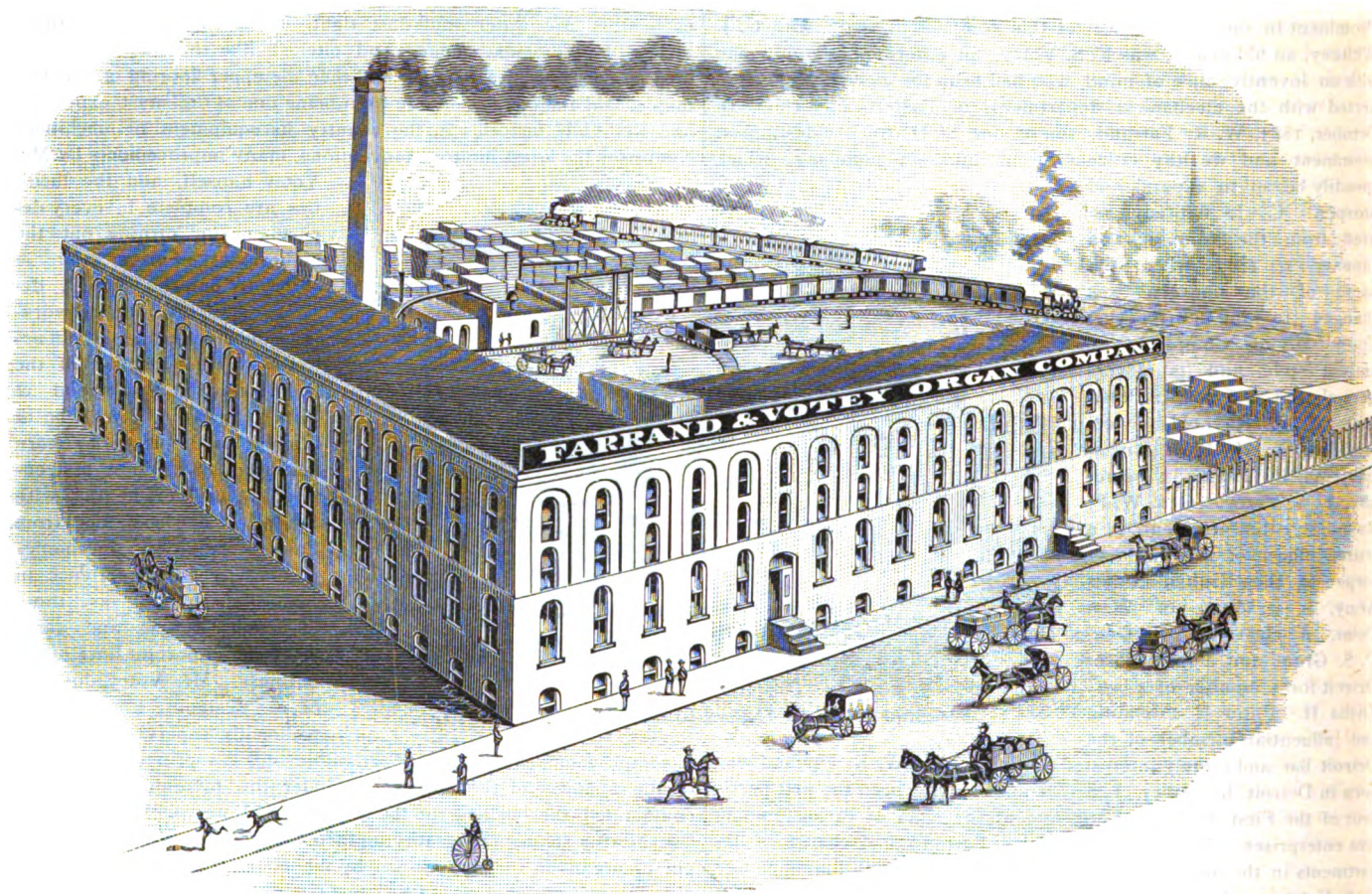
In its regular organs the company has many new and exquisite designs, particularly those beautified with ornamentations in square turning. One of its original and unique designs in ornamentation is braided or basket wood. On it is used lincrusta walton for panel trimmings, which finishes up with a splendid polish. Others are finished up in antique oak trimmings, a design at once striking and elegant. The handsome cove panels of curled walnut already used on the Century organs are a noted feature of the Farrand & Votey Organ Company's manufacture. Its organs are all mounted on large  $\frac{1}{4}$ -inch lignumvitæ castors, which cause the heaviest organ to roll

Farrand y Votey una combinacion de nuevos inventos y modelos que se han agregado á su alto valor intrínseco lo mismo que á su utilidad y exterior grato.

Se compone la compañía de los Señores W. F. Reynolds, presidente; E. H. Flinn, vice-presidente; W. R. Farrand, tesorero, y E. S. Votey, secretario. El presidente, el General W. F. Reynolds, es antiguo ingeniero militar de los Estados Unidos, teniendo grado académico de West Point y habiendo sido condiscípulo del General Grant.

#### Die Farrand & Votey Orgel Gesellschaft.

**D**IE Farrand & Votey Orgel Company ist die Nachfolgerin der Detroit Orgel Company und hat ihren Wohnsitz in Detroit, Mich., V. St. von A. Beikommender Holzschnitt veranschaulicht die grossartigen Fabrikanlagen jener Gesellschaft. Dieselben nehmen einen Flächenraum von ungefähr vier Acker Land ein und haben eine jähr-



NEW FACTORY OF THE FARRAND & VOTERY ORGAN COMPANY, DETROIT, MICH., U. S. A.

easily and will not cut carpets like iron or brass castors. Nearly all of the special features of merit combined in the Century organs are of Mr. Votey's own invention and patented by him. Briefly summarized they are lamp, the desk, the fall-board, the key-slip, the back, the front, the pedal-lever, the valve-protector, the solid wire couplers, the mouse-proof features, the pedal carpet-protector, the swinging music-pocket, the removable swells and the key-frame brace.

#### La Compañía Fabril de Organos de Farrand y Votey.

**L**OS propietarios de la compañía manufacturera de órganos Farrand y Votey son sucesores de la Detroit Organ Company, de Detroit, Michigan, E. U. de A., donde tienen su taller. El grabado que va adjunto permite formar una idea de lo importante que son sus talleres. Cubren efectivamente unos cuatro acres de terreno y son capaces de producir anualmente unos 7,200 órganos. Sus instrumentos ocupan un alto grado de eminencia, teniendo su rango al frente de los mejores que produce el país, probándolo además el hecho de la rapidez con que ha ido creciendo el número de órganos entregados al tráfico que en 1883 no excedió de 767. Hay en los órganos de

liche Leistungs-Fähigkeit von 7,200 Orgeln. Die von dieser Gesellschaft angefertigten Orgeln bekleiden einen hohen Rang; Beweis davon liefert hinreichend der Umstand, dass im Jahre 1883 nur 767 Instrumente hergestellt werden konnten. Was besonders in Verbindung mit den Orgeln von Farrand & Votey hervorgehoben werden sollte, ist der Umstand, dass neue Erfindungen und Modelle bei ihnen in Anwendung gekommen sind, welche dazu beigetragen haben, ihren inneren Werth durch Nützlichkeit und Schönheit noch zu erhöhen.

Die Interessen derselben werden durch folgende Herren gehandhabt: W. F. Reynolds, Präsident; E. H. Flinn, Vice-Präsident; W. R. Farrand, Cassirer, und E. S. Votey, Secretär. Der Präsident, General W. F. Reynolds, ist ein in den Ruhestand versetzter Officier des Vereinigten Staaten Ingenieur Corps; derselbe besuchte mit General Grant zusammen West Point.

NEAR the headwaters of the Puyallup River, in Washington Territory, and within some thirty miles of Tacoma, are beds of bituminous coal. Mining is already carried on to a large extent, and the railroad company has expended large sums to increase its shipping facilities.



# The American Mail & Export Journal.

Publication Office: 126 and 128 Duane St., New York, U. S. A.

Cable Address, Catchow, New York.

NEW YORK, OCTOBER, 1887.

**B**Y treaty stipulation with Spain all discriminating duties of tonnage or imposts in the United States and in the islands of Cuba and Porto Rico and all other countries belonging to Spain have been suspended, the two governments mutually agreeing to an absolute equalization of such dues. The treaty stipulations were signed on September 21, and are given in full in our Washington report. It is to be hoped that Spain will compel the strict observance of this agreement by her colonial representatives.

**S**LOWNESS of action seems to be the distinguishing feature of government officials. It may accord with diplomatic usage for the State Department to protract negotiations and reach conclusions with delay, but we hardly think that this system needs to be carried so far as to suspend publication of the reports required from our consuls for a period of ten months. If these are of special value it is of importance that they should be given out with as little delay as possible. It is hardly probable that they may contain anything detrimental to the service or incompatible with public interests. It may rather be urged that the incompatibility consists in retaining them for so long a time in the hidden archives of the government.

**M**ORMON proselytes continue to come to this country in numbers. The specious inducements held out by the Mormon missionaries cannot be fulfilled, and the people who are thus deluded do not know what lies before them nor that they are brought over here to aid in defying the laws of this country. Were it possible to inform Mormon converts of what lies before them the newspapers of Europe could do good service in disabusing their minds, but unfortunately the lack of information is more extended there than here and it is difficult to frustrate the work of the Mormon Church with people who do not read the papers. The polygamous doctrine which is part of the practice of the Mormon Church in America is not disclosed in all of its vicious features to those who are being gathered in; but there should be some effort made to disseminate knowledge of the real purposes of those who are engaged recruiting victims for the rites of the Endowment House.

**S**EVERAL American exhibitors were awarded the certificate of "first order of merit" at the Jubilee International Exhibition held at Adelaide. Among these we are pleased to note the Lockwood Press, which on this, as on every other occasion when it has engaged in competition, has secured first place for its printing exhibits. Among the other exhibitors honored with awards were the Estey Organ Company, the Smith American Organ Company, Wilcox & Whyte, the Fischer Cooking and Heating Apparatus Company, Rathbone, Sard & Co., the Rochester Lamp Company, Gilbert & Barker, J. H. Jenks, Greenaway Brewing Company, Hannis Distilling Company, Shannon File Company, A. S. Barnes & Co., John A. Lowell & Co. and Banning, Conover & Co., in the United States, and W. Bell & Co., Canada. It is with surprise we note that in important lines of industry other than those represented by the firms mentioned America did not take part in the display. We hope that at the international exhibition to be held in Melbourne next year there will be a wider representation of our varied manufacturing interests. There is no good reason why these opportunities for bringing our goods into prominence should be neglected.

**R**UINOUSLY low duties and overwhelming German competition have brought the Swiss chemical industry to the verge of destruction. This same competition and the absence of import duties have made several British industries extinct and threaten other important interests of the United Kingdom, and yet there are people who profess to believe that low tariffs, and indeed no tariffs at all, are the most effective means of broadening trade and building up the manufactures of any country. With the examples of destruction wrought by low duties it ought not to be expected that the American people can be encouraged in the belief that unconditional surrender to the policies and competition of other countries is advantageous. Consul Catlin, reviewing the condition of the industries of Switzerland, not expressing any opinion, but presenting a bare statement of facts, gives testimony which is conclusive as to the inefficiency of a low tariff against cheap labor and lively competition. It cannot be wondered at that Switzerland should strive, as she is now striving, to effect a change in her commercial relations with Germany which will give her a living show. A tariff war between the two countries is threatened. Better that than submission and industrial extinction.

**H**ONDURAS "has no railroads, grist mills, cotton gins, water works, gas works, electric lights, photograph galleries, factories, banks or banking houses, and—no American merchants." Such is the sententious remark of Consul Herring, and it may be understood to include every other feature of enterprise which is a boast of civilization and makes life worth living. But Americans and American capital have taken hold of important mining interests in Honduras, and it is reasonable to suppose that this will induce changes which will bring about a new order of things. It is obvious that the country will ere long, if not now, call for the appliances which are needed for development. One of the earliest openings to be taken advantage of is that for trading and bringing to the knowledge of the people of Honduras their yet unsuspected wants. The American merchant should enter upon the field, so that in future reports Consul Herring shall feel called upon to modify his previous statement. There is room in all of the Central American states for many things of our production. Tools and agricultural implements properly brought under notice must find a market there. It would be well for some of our manufacturers to explore this field.

**C**ONSUL-GENERAL WALLER, at London, reviewing in his last annual report the statistics of trade between the United Kingdom and the United States, remarks that the ratio of exchange was nearly four to one in favor of our country; that is to say, the United States sent to Great Britain nearly four times as much as was received from her, the aggregate balance of trade being \$322,424,960. The figures of the export and import trade of the United Kingdom with the United States, values stated, during the year ended September 30, 1886, to which date the consular statistics are made up, appear to be as follows: Exports to the United States, \$165,512,318; imports from the United States, \$487,937,278. England can ill afford to do without the supplies which she obtains from the United States, and the figures cited show how essential we are to her well-being.

**T**HERE is constant proof of the injury which British industries are suffering from the unrestricted competition of Continental rivals. The complaints of the decadence or extinction of a valuable branch of manufacture which have appeared in the English journals from time to time are being supplemented by others as the years pass by. Consul Lathrop, in writing of the sugar-refining interest of England, refers to the disadvantages under which the English refiners work, and



says: "Again and again have they petitioned the government for aid. Again and again have they pointed out that not only were large refining interests ruined in England and thousands of men driven out of employment, but that large cane plantations in the colonies, particularly in the West Indies, were going out of cultivation, that their owners were being ruined and that their laboring population were reduced almost to starvation. But the answer of the government has always been that, if foreign governments were guilty of the economic folly of providing cheap sugar for England, England would not balk their aims by interposing a countervailing duty. But this answer has been esteemed by failing refiners and ruined planters as poor consolation, and the people who have had the benefit of the cheap sugar would willingly sacrifice a penny or two a pound on sugar, and in this particular instance their robust free-trade principles, in order to maintain their domestic and colonial sugar interests." The sugar-refining business of the United Kingdom may follow the other extinguished glories of British trade and manufacture, but it will supply another instance of stoical indifference or stolid adherence to doctrines which are practically "played out." Further comment is not needed.

**N**O doubt the recent elections in Bulgaria will be distasteful to Russia, but it may be that these will not be sufficient to rouse her resentment to the extent of precipitating a war in Europe. The new Sobranje is in accord with the existing Bulgarian Government, and this means hostility, if not resistance, to Russian demands. Will the Czar undertake to coerce the defiant principality into submission to his views and will he be sustained by the other European powers should he attempt it? On this question hangs the issue of war. There is some doubt as to whether Russia will be permitted to send troops into Bulgaria without meeting with opposition from Germany and other states, and for this reason she may conclude to withhold her hand while prosecuting her designs in the East. But then it may be that she will declare that Bulgaria must yield to her will and take the chances of compelling submission. The events of the next few weeks may develop much or little disturbance in the peace of Europe; but it may be confidently asserted that Russia is ever waiting to initiate war, and is always ready to precipitate it whenever in the opinion of her ruler there is a reasonable chance for success. The Tartar is not a lover of peace, nor does he believe in a policy which deprives him of spoliation.

**N**OT long ago we called attention to the comment of the London *Iron* on the fact that American hardware and tools are to be found in every corner of Europe, and that nothing in this line is produced in the Old World which can equal the American articles. This testimony is borne out in another line of manufacture. One of our consuls, who has been making investigations in regard to agricultural implements in districts where the sale of farm tools is extensive, says that it is the concurrent opinion of those qualified to speak that agricultural implements of all kinds manufactured in the United States are superior, one dealer remarking: "Whatever the Americans make is made well; the iron and steel parts of mowers and other tools are perfect and the parts fit with mathematical accuracy." This is the lesson we have been trying to impress upon the many foreign buyers included among our readers, and we assert positively that for machines and tools made for special work by firms which are careful not only of their products, but their reputations, the manufactures of no other country can vie with the American as to adaptability, quality, finish, lightness or any of the features which are essential to producing satisfactory results in operation and in the mind of the purchaser. But it must not be forgotten that there are many imitations purporting to be of American birth, and which never came from American shops. There has

been one German machine in which the castings were taken directly from an American model, and the imitator, not knowing that it is the habit of some of our manufacturers to change the number of each machine, sent out his counterfeits, each bearing the same number, a thing which would not happen in this country, except by a mischance. We reiterate our warning to foreign buyers that when seeking to purchase our machines and tools they shall obtain satisfactory assurance of their origin and secure the guaranty of the manufacturer. They may find it more expensive to buy these goods at the outset, but when they have realized their advantages they will be content.

**J**UDICIOUS advertising, the circulation of catalogues in the Portuguese language and the exhibition and distribution of samples are all excellent ways of making American goods known to the Brazilian public. This is the opinion of Consul-General Armstrong, and that such means would be effective for clearing the ground there is no doubt. But we need more than these. The commercial field must be broken up more effectively and plowed deeply by getting into closer relation with the people of Brazil through constant communication and the establishment of agencies or branch houses which shall bring the empire of the South and the republic of the North *en rapport* with each other. It is of importance also that the Brazilians should be brought to know what is distinctively of American origin and be supplied with the materials and implements which we use in our workshops and fields. Complaint has been made that the importation of American tools and machines into Brazil has been badly conducted, and that some of the implements purporting to be of American origin are not what they should be. It is almost useless to give warning of German or other imitations of American goods if our manufacturers cannot take pains to exhibit the bona fide articles and bring them into comparison with the tools which bear fraudulent marks and are the counterfeits of those from which they take their type. We may caution our Brazilian friends against the cheap imitations of our goods, but there is given them little opportunity for discrimination. Of course, our manufacturers are at fault for failing to take needed steps to introduce their wares, and next foreign buyers are careless in buying on faith and without knowledge of what is genuine; but, after all, it is difficult for individual enterprise to surmount the obstacles which a slow and non-progressive public policy as regards our foreign trade fails to attack and remove. We have presented to us the fact that our tools and machines will find buyers, and no suggestions of tariff policy can interfere to subvert this fact. The trouble is that the needed encouragement is not given nor is the liberality accorded which will help and facilitate our trade. Congress is slow, and even when it contributes to the means for developing our trade its dole is fastened on and withheld by those who are expected to be subordinate to the public commands.

**I**T is unimportant whether the cable reports of the occupation of Herat by a body of three hundred Russians under the guise of merchants be true or not, so far as the mere occupation of the city is concerned, for that stronghold was, in effect, already lost to the British on the evacuation of Candahar by the Gladstone Government. Assuming it to be true, however, that Russia has by a simple *coup de main* taken possession of the key of India, it remains to be seen whether the British public will rest content under the policy which has consisted in the main of tongue-wagging brochures, books, pamphlets and leading articles, while Russia has been successfully carving up Asia with the sword. With such a power at the gates, holding Persia and Persian resources subject to her will, it was vain to suppose that Afghanistan could long remain independent, even in name. Bound to England by no traditions, by no strong political influences, such as might have been used to



constrain them, it was to be expected that the mercenary and perfidious tribes would ultimately succumb to that power which was most lavish of its promises and most strategic in its advances. The question for England is not the occupation of Herat, but how shall she guard against this overt menace to her Indian possessions at this eleventh hour. With Herat, the easternmost terminus of the Transcaspian Railway, lost, the Russians are only 599 miles from Sibi, the head of the Indian system, and it remains to be seen with what composure that nation will recall the reiterated assurances of her statesmen that, in spite of the withdrawal from Candahar, and by reason of the large resources in India and superior communications with Afghanistan, they could advance a force at a few days' notice which would easily wrest that city from its captors. Assuming the cable report to be true, it remains to be seen if those who posed as prophets will retain their mantles when their predictions are put to the test, or if the weakness and vacillation which has been the temptation and opportunity of Russia will be branded with contempt. The qualities of the lamb are very excellent qualities, but they are specially inapplicable to dealings with the wolf. Of violent outbursts of British public opinion against Russian aggression in Asia there has not been wanting enough and to spare, but they have never yet succeeded in exercising a restraining effect upon her advances, and the political history of the past few years teems with the impotency of mere diplomatic expostulations and protests. The axiom still remains: either Russia or England must sway the destinies of Asia, and to which of the two the lot will fall will take more than words to decide, and although England is just now not without serious difficulties to contend with at home, there is nothing so fraught with possibilities of danger to her power as the procrastination of that inevitable struggle for supremacy in that land over whose sands the clouds of war have so long been gathering.

IN May, 1886, a conference was held at Tokio for the purpose of considering the treaty between the European powers in all of its details. The treaty as then arranged was to consist in brief of an augmented tariff schedule, an extension of the applicability of Japanese law to foreigners, an increase of the powers of Japanese courts, and a partial opening of the empire. Japan desired not only a revision of the tariff, but she also wished to effect an arrangement having in view the eventual abolition of extritoriality. The foreign powers, England and Germany, on the other hand, were willing to increase the tariff rates but demanded in return concessions regarding foreign travel and trade in the interior which the Japanese Government justly regarded as involving a dangerous extension of consular jurisdiction. These powers then proposed as an alternative the opening of the empire and the abolition of extritoriality, on condition that for a term of years qualified foreign jurists should be appointed judges in Japanese courts to try all cases in which foreigners were interested. The situation based on these considerations is now as follows: The Japanese Government does not intend to submit its laws for revision or rejection by the foreign powers, for it regards this as an infringement on its legislative rights. It proposes, however, to reform the laws wherever necessary in accordance with the principles recognized in all civilized legislation. To this end a commission, numbering among its members several foreign jurists, is engaged in the work of codification. Meantime the Japanese Government prefers that the consideration of the question of treaty revision should be temporarily suspended, so that when the codification of the laws shall be finally completed the foreign powers may look to it for the guarantees which otherwise they might think necessary to insert in the treaties. The wonder is not that Japan has yet failed to reach the goal for which she has so long striven, but rather that she has advanced so far upon

the road to success, and no one who has watched the rapid rise of this country can fail to sympathize with the laudable ambition and energy which she has displayed under the most discouraging conditions and in the face of the greatest obstacles.

DURING the past fifteen years American locomotives, railroad and tramway cars have become very popular in Brazil, and numbers of them have been exported to that country. It may therefore not be out of place to note down the projects of the former Minister of Public Works, Senhor Antonio Prado, and adopted by his successor, the present incumbent, Senhor Rodrigues da Silva, and submitted to the Brazilian Parliament. The object which Prado and his successor Da Silva have in view is to perfect the present Brazilian railway system and build or grant concessions for building such new connecting lines as to complete it, and for such purpose not only to use to best advantage the existing lines, but as much as possible the natural waterways, in which the empire abounds to an extent as great as the United States. The general plan submitted recommends: 1. The extension of the Sorocabana line from Itapatinga across the province of Paraná to a junction with the Uruguayana line in the province of Rio Grande do Sul. 2. The extension of the same Sorocabana line in another direction—that is, from Botocatu along the banks of the Paranapanema River to the point where the Tibagy River flows into it, a distance of 350 kilometres. From this point river navigation is to be taken advantage of on the Paranapanema, Paraná, Ivintheima and Brilhante rivers, a distance of 790 kilometres, to Port Santa Rosalina. 3. A railroad is to connect Port Santa Rosalina with Nidac, on the Mandego, a tributary of the Paraguay River, a distance of 130 kilometres. From Nidac regular navigation is established all the way to Matto Grosso's capital, Cuyaba, a distance of 180 kilometres. 4. The extension of the Mogyana line, a work for which a concession has already been granted, to the Parahyba River, which separates the provinces of Minas and Goyaz, thence to Jurupensen, and a short track beyond the capital of Goyaz to the Tocantins River, a distance of 300 kilometres. At Jurupensen an enterprise steps in for which the contract has been made and only awaits ratification by the Senate—the navigation of the Tocantins, Araguaya and Vermelho rivers, the rocks and rapids of a small portion of the Tocantins rendering navigation impossible at that point. 5. A railroad will have to be built to connect the upper and lower Tocantins, this track to be called the Alcobaça Railway, and destined to establish communication with Belem, the capital of the province of Pará. 6. The railroads necessary for making connections between the railroads in operation in the provinces of Rio Grande do Norte, Parahyba, Pernambuco and Alagoas, and bringing them in contact with those of the province of Bahia. This is the Brazilian railroad system of the future, and although it will be several years before this plan can be fully carried out, the very fact that the government and people at large are bent on bringing harmony into a system which is now deficient in it, and thereby opening up to their full extent the resources of this magnificent country, is a step forward. Brazilian credit now stands better in Europe and America than it ever did, and there will be no lack of capital. In July 7,929 kilometres of railway were in operation in Brazil, and 1,370 in course of construction. The ease with which the slavery question has been disposed of since September, 1871, the certainty that in six years that institution will have ceased to exist without materially disorganizing labor, the great rise in coffee and the generally flourishing condition of the country, where serious political troubles are a thing absolutely unknown, are facts which are well calculated to inspire confidence at home and abroad. The carrying out of the Prado-Silva project will even necessitate the ordering of more American river steamers.



## U. S. Ministers and Consuls.

### Slag as a Fertilizer.

COMMERCIAL AGENT SMITH.

IT may not be generally known to the American public that the slag obtained in the working of crude iron, which was formerly regarded as a refuse article to be got rid of in the best way possible, cast upon hillsides and thrown into streams of water, has in the last three or four years come to be recognized in Germany as a valuable fertilizing agent and an excellent substitute for superphosphates. Four years ago this stuff was, I believe, considered as worthless; to-day 4,000,000 centners (400,000 English tons) of it are ground into a fine powder to be scattered over the fields of Germany to increase the products of the husbandman. Wonderful indeed seem the claims that are made for it.

In pig-iron much phosphorus is met with, which must be removed when the iron is converted into steel or forged. The freeing of this phosphorus from the rough iron was formerly a matter of much difficulty, but is now very satisfactorily done by an improvement of the Bessemer process. The slag obtained in this process is denominated Thomas slag, and is rich in phosphoric lime. From it the iron is separated, and the slag then broken up, sifted and finely ground into dust, powder or meal, which is put upon the market as a fertilizer. This product is said to be generally made up of about 16 per cent. of phosphoric acid, 50 per cent. of lime, 12 per cent. of oligist iron and oxidized iron and 7 per cent. silicic acid, but the phosphoric acid can run from 10 to 25 per cent. Under the name of patent phosphate meal, a dust, meal or flour is given to the public made out of manipulated Thomas slag, which contains from 24 to 28 per cent. of phosphoric acid.

Up to two years ago it was not believed that the crude slag finely ground could be used as a fertilizer. It was thought that it would not easily enough dissolve. A closer study of the characteristics of phosphate meal led to a change of these views, however, and to the conclusion that by simply reducing the fine material to a fine powder or dust a more effective fertilizer is obtained than from bone dust or even raw Peruvian guano. All that is done to the slag is simply to grind it to a powder as fine as dust.

The German iron works make about 4,000,000 centners (400,000 English tons) of slag a year, which can be sold to the farmers, when reduced to a dust, at a price one-third of superphosphate, containing an equal quantity of phosphoric acid.

### Commercial Prospects in Hayti.

CONSUL-GENERAL THOMPSON.

SINCE the revolution in 1883, when certain cities of Hayti were in a state of siege, and fearful forebodings indulged in by capitalists, there has been a steady declination of trade, notwithstanding eventually the government forces succeeded in causing the insurgents to capitulate. The leader of the revolution dying, his party was totally demoralized. This result should have caused an improvement in commercial affairs, as the administration of President Salomon showed that the government was capable of overthrowing such insurrectionary tendency, and that, too, of a party guided by an intelligent chief; but entire confidence in commercial circles has not been fully established. The merchants, becoming fearful of risking their money, ceased relying on governmental securities, or nominally remained contented in doing business on a smaller scale.

For the present fiscal year a possibility exists of an augmentation in business. There is every reason to expect a fair coffee crop, which is the staple export of the country. Nearly all of this article is shipped to Europe; hence the exporters have their credit in Europe, and if there is an abundance of coffee, exchange will fall and good times be enjoyed.

On June 30, 1886, General Salomon was re-elected for seven years more to the presidency, having a majority so favorable in the Senate and House that he was elected unanimously; and it is believed he has succeeded, on the one hand, by the defeat and death of Boyer Bazelaïs and the voluntary exile of others of the leaders, and, on the other, by appointing to positions in which they are harmless many of the agitators of the heterogeneous parties that have been a curse to this republic

since its independence. Now it is believed that the numerous outbreaks of these parties are coming to an end, and as the countries of South America are producing stupendous quantities of coffee, unless peace and its concomitant join with labor for the tillage of this soil—Hayti depending upon her spontaneous growth of coffee, almost void of cultivation—Haytians, neglecting the wonderful resources that thus could flow with tenfold force into the national treasury, must see their country degenerate regardless of its natural fertility.

In conjunction with the above outlook I have heard many conversations where foreign annexation or a protectorate was argued as the only way of rescuing the country. I have heard Germans say that if it was not from fear of the climate by their people they would make a move in this direction. But withal it is pointed out that owing to the position taken by the United States in the treatment of this republic, they dare not, regardless of the "Monroe doctrine," even interfere when the Stars and Stripes, with their love of freedom, liberty and national autonomy, continue to recognize Hayti as heretofore.

### Competition and Overproduction in Germany.

COMMERCIAL AGENT SMITH.

GERMANY is now simply disturbed, in my opinion, by the present universal business depression and by overproduction. Her tariff may be higher than ever before, but her people buy their food and their raiment cheaper. Competition is too keen in the empire, and the industrial establishments continue to pour out their goods, notwithstanding the great hue and cry of overproduction that is raised. They talk day and night of overproduction, and yet the man who dares propose a general shortening of the hours of labor and prohibition of work on Sundays becomes a target for the critics. There was much talk last winter about a normal day's work and of prohibiting Sunday labor, but the general feeling was too strong against it, and yet nearly every chamber of commerce and almost every business man in the country is constantly sighing over overproduction.

The fierce competition reduces prices to a minimum. Cheap money enables the large establishments to go on producing and extending, while the smaller concerns are forced to the wall, and the business of the many becomes that of the few. That is now said to be the case in Germany. There is an increased production and consequent intenser competition in all branches of business, leading to an enlargement of the big establishments and limitation and annihilation of the small ones. The purchasing power of the consumer, however, it is maintained, does not thereby become increased, as the rate of interest on money is becoming ever less. The farmer is not benefited, as he, notwithstanding the new protective duties on his products, must sell them at greatly reduced prices. Neither is the merchant, who finds his sales diminished by reason of the capitalist and farmer receiving lower incomes. Nor does the manufacturer profit by it; nor the great mass of workingmen, whose wages, in consequence of the fierce battle for existence, the industrial establishments are unable to raise. While the production increases the consumption remains the same, the market continues stocked and prices keep falling. High duties may perhaps protect the land against the surging world around it, but what is going to protect it against the intense rivalry among its own children?

Great efforts are being made to procure for the empire profitable foreign markets, especially as by increased customs duties or other protective regulations the exportations to old markets have been rendered more difficult. The subsidizing of steamships, the reform of the consular service and the protection which the government affords to colonial undertakings are all in this direction. Germany, however, cannot expect to do a flourishing business until the industrial situation improves in France, the United States and other countries. Until then must Germany be content to maintain the place it has lately taken, and go slowly forward. Germany's condition is less unfavorable than that of some other countries, and it is a hopeful sign for Germany that the Germans, who formerly stood behind other nationalities in the race for the commerce of the world, now take a more advanced and assuring position, with a prospect of overreaching their competitors. "In union is strength" they are every day perceiving more and more.

As in industrial circles, so among the merchants are increased competition, low prices and unsatisfactory profits to be noted. A change



is taking place, it is said, in the manner of distribution of the producer's products into the consumer's hand. The middleman is being pressed steadily out of the field, and the wholesale dealer is coming into closer relations with the very small dealers and with consumers. The consumers are often bound together in co-operative societies and draw their needs from the manufacturers or importers directly without the interposition of a medium.

### British Trade Depression.

CONSUL LATHROP.

TRADE during the year 1886 in the consular district of Bristol has moved in entire accord with general conditions; hence it is impossible to consider it independently in the first instance, and a wide preliminary survey must be made.

The long prevailing commercial gloom, though lightened during the latter months of 1886 by a few stray gleams here and there of returning activity and enlarging prices, has continued uninterruptedly throughout Great Britain. It is of interest to determine, if possible, the causes of this protracted depression, presenting, as it does, the unprecedented conditions in many branches of undiminished, or even of increased production, with continually lowering and unremunerative prices.

The most widely operating cause of low prices, and worthy to be mentioned first on account of its general effect, not only on all the European nations but also on the United States, is the employment of gold alone as a measure of values. The adoption of the gold standard by Northern European nations, the suspension of silver coinage by the Latin nations, the resumption of specie payments in the United States, the sale of silver by the gold-adopting countries, all combined to unduly appreciate the value of gold as compared with its sister metal and with commodities. The result has been a long, slow, grinding adaptation to the new conditions, pressing unequally upon nations and upon individuals, and intensely aggravating a depression which in all probability would have occurred without a concurrent restriction of circulation by various nations, but which would have been, in all probability, by no means so severe. This subsidence of values has affected Great Britain quite as much as other nations, but being the richest of the European nations, and being so heavily a creditor of the world, she has felt the depression last, and thus, while Continental countries have been driven to desperate exertions to improve and cheapen their manufactures and to find new and enlarge old markets, Great Britain has been asleep, and now, when the pressure is upon her as badly as upon the others, she wakes to find Germans, French, and Belgians actively disputing markets which she thought hers by prescription.

Foreign competition has also contributed to English depression. The unification of the petty German states into a great nation, and the direction and concentration into single channels by a master hand of forces hitherto diffused, has exalted the German nation *per saltum* into a successful and dreaded competitor of England. The French and Belgians have also cut not only into England's foreign markets, but into her home trade as well. Sometimes this latter is a question of freight charges, rates to London from, say, Antwerp or Havre being less than from Manchester, for example.

Not only are wages actually lower on the Continent, but the hours of labor are longer—sixty-five, seventy, even seventy-two hours per week, against fifty-four, fifty-six and sixty. In some branches of manufacture the question of artistic skill and natural taste in the labor intervenes and, particularly in France, is of assistance to the manufacturer in producing better and cheaper stuff than his English competitor. I find also in examining the testimony of the various witnesses before the commission on depression in trade, that manufacturers charge and advance striking instances in proof that trade unionism has materially increased in some branches the cost of production in England by forbidding superior pay to superior merit, by preventing men from working overtime, &c. A large manufacturer in Cork, Ireland, employing both English and Irish, went so far as to say that artisans disposed to do a fair day's work for a fair day's pay were the exception, not the rule, and that he attributed their less productive labor to trades unionism "as much as anything else."

After monometallism and foreign competition as causes of depression comes over-investment during the active years of the last decade

in certain kinds of manufacturing plant, and the consequent inability to find a market for the now largely increased output. In some trades, notably ship-building, when the natural demand ceased, employers, to keep their men employed and their plant from deterioration, constructed either on their own account or on unduly easy terms, the result being an abnormal production, continuing for a considerable period beyond the really active years, and resulting, in shipping for instance, in redundant tonnage, low freights, ruined owners and hungry sailors.

Investment in manufactures is rendered almost too easy in Great Britain by the simplicity with which limited companies can be organized and the ease with which minute rivulets of capital can be concentrated. No doubt undue multiplication of small and sometimes badly managed limited companies has contributed to the injury of commerce.

Foreign tariffs have contributed much toward restricting the commerce of England. Not only have they actually limited her consuming area, but they have also, through the ease with which capital, skill and machinery can be moved in these days, induced the transplanting of English manufactories. English manufacturers are now producing in the United States behind the shelter of the tariff, and there has also been some removal of plant to Germany.

Great Britain is each year less a banker for the world and a central depot for the distribution of goods. Direct shipments from producer to consumer on the Continent now eliminate London more and more and deprive that centre of large revenues in commissions and brokerage.

### Imports of American Manufactures into the Netherlands.

CONSUL ECKSTEIN.

KNOWING that interesting and useful information and suggestions intended and calculated to foster and promote the export trade in the products of our industries are always welcome and appreciated, I never fail to improve to the fullest extent such facilities as are at hand in gaining information bearing thereon and connected therewith, and report the same.

The imports of and trade in articles the manufacture of the United States were last year, and are up to now apparently, or so far as I can judge, very much the same as they were during the preceding years of 1883 and 1884.

The demand keeps up and the business is being maintained in a very large number of different articles, but in only comparatively few of them is it of much importance.

While from one or another cause the trade in certain articles stopped or declined, it increased in others, and new articles have been introduced and found a market.

Fred. K. Stieltzes, the intelligent and energetic representative here of a number of American manufacturers, states to me that he considers that at this time there are good opportunities for the successful introduction of American machinery for use in different industrial establishments, and also for engineering implements and supplies.

Any person or firm interested in this information and desirous to obtain correct and reliable data may apply for them to the above-named gentleman. Besides, I am myself ever ready to procure and furnish information to any and all manufacturers and exporters, &c., who may wish to be posted as to the chances or prospects for finding in this country a market for their products or wares.

To give in a report like this particular, accurate and really useful information concerning many classes of goods is hardly practicable, whereas it is comparatively much less difficult to obtain and give information of such a character as respects one or but a few articles at a time.

It has just been brought to my knowledge that Worthington steam-pumps, first brought here only a few months ago, are now being worked at various water-works and in several sugar refineries, and that they give complete satisfaction.

The American Elevator Company, Otis Brothers, New York, through Mr. Stieltzes, their agent here, has just received an order for four of their "hydraulic lifts," to be put into the new hospital in course of construction on the Coolsingel, in the city of Rotterdam.

The American Manufacturing Company, Waynesborough, Pa., has recently furnished an evaporator for one of the largest fruit-preserving establishments here.

The Troy Laundry Machinery Company has also an agency here,



and their washing-machines compete successfully against those of English and French manufacture.

The Gardner compensation governors, for regulating the speed of steam-engines, are highly favored by the leading engineers of this country, and getting to be largely in use.

Tarr & Wonson's copper paint for the bottoms of vessels and Prince's metallic paint for painting iron-work are finding ready sale.

The imports of lubricating oil are increasing, but chiefly for re-export to Germany.

Remington type-writers are growing in favor and their sale extending.

The trade in school furniture and school slates is also well maintained.

The agent of the Singer sewing-machines writes to me that the general imports and sales of sewing-machines fell off considerably during the year 1885, as compared with 1884 and previous years, but that his own business experienced no diminution whatever, and therefore he considered himself justified in concluding that the competition, especially from Germany, has lost ground and is weakening.

### Railway Construction in the Argentine Republic.

CONSUL BAKER.

THE work of railway construction has been prosecuted with more than usual activity during the past year.

The extension of the Central Northern road is now completed a distance of 270 kilometres beyond Tucuman, and most of the work is ready for the superstructure as far as Salta. One hundred kilometres of road have likewise been completed between Rosario de la Frontera and Metan. The work between Chilcas and the Rio Pasagè is in progress, and the whole line will be pushed during the coming year, as also the branch from Dear Funes to Chilceto, a distance of 415 kilometres.

All the accessory works of the branch of the Northern Central to Santiago del Estero have been finished, and also of the branch to Chumbicha, 176 kilometres, and both lines have been opened to the public service.

The road from Buenos Ayres to Rosario, a distance of 305 kilometres, finished at the date of my last annual report, has been running regularly during the last year, thus reducing the time between the two places to seven hours. It is now being extended on to Sunchales, 45 kilometres, and will soon be completed to that point.

A second road, projected in the interest of the Buenos Ayres and Pacific road, is now under construction from here to Mercedes, in this province, where it is to connect with the said Pacific road, now completed as far as Mercedes, in the province of San Luis, a distance of 336 kilometres. It is now being further pushed on to Orellanos, 355 kilometres, to which place it will be finished in a few months. From Mendoza westward the last link in the Andine road is now under contract.

Various other roads have been projected, and for some of these concessions have been obtained from the government; among these is a railway from Bahia Blanca directly across the Andes by a new pass to Chili, and another from Buenos Ayres also across the Andes to Chili by a southern pass.

As showing the progress which railway construction has been making in the Argentine Republic, I may say that in October, 1880, the total number of kilometres was 2,318, of which 810 belonged to the national government, 348 to the provincial government of Buenos Ayres, and 1,104 were in private hands. There are now 6,152 kilometres in the republic, of which 1,877 belong to the nation, 1,104 to the provincial governments, and 3,161 to private companies, a gain of about 3,834 kilometres in a little over five years.

### CONSULAR NOTES.

#### Metal Tariff in Russia.

The new Russian tariff on iron and steel, and goods into which these metals enter, it is thought, will considerably affect the foreign trade of the country. As the trade of Russia with the United States has sunk almost to a minimum, it may have no other result with us except to discourage hopes of any revival of that trade. Russia may still be obliged to buy cotton from us, though she seems to expect successful

results from her cotton raising in Central Asia. But the effects may be very injurious to other countries. Germany has hitherto largely supplied the Russian market with tools and manufactured ironware. The Russians complain that these were largely of inferior material and workmanship, and that they were put on the market at such low prices that they drove out better wares to the great injury of the country. The peasants were not discriminating purchasers, and were likely to buy the cheapest goods.—*Minister Lothrop.*

#### Glass Making in China.

The Chinese in Hong Kong manage to turn out a considerable quantity of glassware of various kinds and of fair quality with the minimum of implements and a plant the most inexpensive. True, the material in general use is old glass remelted, for which expensive furnaces and apparatus are not indispensable. The crucibles used are small, rarely exceeding in capacity 200 pounds. These are set in a furnace stoked from a small opening in the side. About three cwt. of coal is used in melting one crucible of glass. The tubes by which the molten glass is collected from the pot are perceptibly lighter and shorter than those used in America. After being blown, the glass is annealed in a small square pit containing ashes and straw, the latter being speedily converted into ash by contact with the heated glass. The molds used are made of clay and are often very ingeniously devised to meet the varying indications required. When taken from the crucible the operator does not marver the lump of molten glass by rolling on a flat iron slab as is usually done. They have, in fact, no marver's tools or other appliances usually seen in glass-blowing establishments. A small trowel-shaped tool of iron, clay molds, and a few iron tubes constitute the Chinese glass-blower's whole stock in trade.—*Consul Withers.*

#### Cotton Cultivation in Russia.

The Imperial Government is making very strenuous and persist efforts to promote the cultivation of cotton within its own dominions, with the hope to carry the home production to the point of excluding all foreign-grown cotton. As I am informed, in most places irrigation will be necessary. And it will be long before the native cultivators can be inspired with American skill and enterprise. At present the native cotton is said to be inferior in the strength and length of its fibre. This may be overcome by the introduction of new varieties. The government has already brought seed and experts in planting from America. It has recently been stated that there was already a considerable cotton plantation near Merv owned and operated by Americans; but this was afterward denied, and it was added that a concession of land for that purpose had been refused to a company of Americans. I do not know what the fact is.—*Minister Lothrop.*

#### Trade of the United States with Colombia.

Within the next five years not less than one hundred cities of South America will establish water-works, and all the material for these will be furnished by England. Large works are now in process of construction at Bogota, the capital of this nation, and all the material for them is landed at this port. It comes from England and is carried in English bottoms. Speaking to the contractor the other day, while looking at the material being put on river steamers—steamers mostly built in England—I told him that the United States could furnish better pipes than those he shipped to Bogota. "I know it," said he, "but these are good enough for all purposes and 35 per cent. cheaper than any I priced in the States. I would prefer to deal with your people, but business is business." An English syndicate of iron manufacturers—the same that had operated so extensively in Chili during the last few years—has just purchased a 200-mile railroad concession in this country, and thus the industry of these manufacturers thrives; a market is made for their goods by their intelligent business methods. Why cannot American manufacturers do the same? And it might be as well to remember that if English capital controls the railroad system of this continent, as it is in a fair way of doing, that the same capital will control all the commercial and industrial avenues of this vast and extremely rich country—second, in fact, to no other land in the world in natural resources of all sorts.—*Consul Vifquain.*



## Foreign Notes.

### Argentine Republic.

According to Sassenberg & Co.'s (Buenos Ayres, August 15) semi-monthly wool report receipts had been restricted to 200 bales of 425 kilograms, and the sales to 2,000, leaving a stock on hand of 18,800 bales. To date the receipts summed up 246,400 bales, against 265,700 same time last year. Last year the stock was only 800 bales. The market remained flat at \$3.20 to \$3.40, paper, good average quality, per 10 kilograms. Dry hides.—There were taken for the United States during the fortnight 50,000 and 20,500 for Europe. Entre Rios brought \$2.80 to \$3.10; Corrientes, \$2.55 to \$2.70, and Santa Fé, \$2.45 to \$2.55, gold, as to class, as they run; classified Buenos Ayres, 23 pounds, at \$3.20 to \$3.30 and camp ox at \$2.30 to \$3.40. The stock on hand was made up of 2,500 Corrientes; 5,000 Entre Rios; 12,500 Paraguay; 1,500 Santa Fé; 5,000 Matadero and 4,000 classified, together, 30,500. Dry horse-hides were fetching \$2 to \$2.40; sheepskins, of which the receipts were light, were selling at 23c. to 33c., paper, the 10 kilograms; lambskins at 60c. to 75c. per dozen. Horsehair was steady at \$6.50 to \$7; southern, \$5.50 to \$6; northern and river hair at \$4.50 to \$5. Washed cow-hair, \$8 the 10 kilograms.

### Brazil.

At Pernambuco, August 27, last year's sugar crop was altogether exhausted, while receipts from the new crop were prevented by heavy rains. Some 7,500 bags regular Americanos were taken at 1,150 to 1,250 reis, equal to 98. 11d. to 11s. 4d. free on board, without freight. Total arrivals, 200 bags per day. Shipments since October 1, 140,822 tons, against 91,660 in 1886. At Bahia, August 26, there was no sugar left for sale. The new crop was expected to commence early, and with favorable weather the first receipts would be due in September. The cocoa market continued quite firm, with sales of 1,000 bags at 7,400 reis the arroba, equal to 60s. 1d. per cwt. free on board, with freight. Rosewood was quiet and unaltered; redwood was neglected at 400 to 500 reis the arroba. Exchange on London, 23½d. At Rio, as per cable October 7, the coffee crop estimate was reduced for Rio and Santos to 3,250,000 bags, against 6,128,000 bags last year, but this estimate has no further effect in Europe and America, where, taken together, the deliveries of coffee of all sorts in July, August and September were only 1,587,415 bags, against 2,654,239 last year.

### Burmah.

Bulloch Brothers & Co. report from Rangoon, September 17, the details of rice shipments to date as follows:

	Shipments To Europe.	1886.	To Other Countries.	1887.	Load'g for Europe.	1886.	For Other Countries.	1887.
From Rangoon..tons.	330,100	295,920	185,100	1887.	6,000	7,410	1,000	1887.
Akyab .....	164,000	117,530	32,700	.....	.....	.....	.....	.....
Bassein .....	118,400	156,290	200	.....	.....	.....	.....	.....
Moulmain .....	44,100	46,260	13,200	.....	.....	.....	.....	.....
Totals .....	654,600	616,000	231,200	.....	9,000	7,410	1,000	.....

### Ceylon.

Volkart Brothers report from Colombo, August 25, that the shipments of coffee from October 1, 1886, to August 18, 1887, amounted to 8,154 tons, against 10,059 same time last year, and 14,028 in 1886. The market was firm, with little offering, plantation being nominally worth 11.50 to 12.50 rupees per bushel parchment, 60 to 65 per cwt. prepared, and native, 59. Coconut Oil.—There were buyers at 377.50 rupees per ton, free on board. Chinchona bark was quiet at 11¢ 13c. per unit, per pound. Plumbago was steady, large lumps commanding 135 to 150 rupees per ton; ordinary ditto, 115¢ 135; chips, 82¢ 90, and dust, 45¢ 50. Shipments to date to all points, 220,221 cwt., of which 148,823 to the United States. Coir Yarn.—No. 1 to 4 was inactive at 7¢ 12 rupees per cwt. Cinnamon was moderately active at 44c. per pound for No. 1 to 4. Ebony was neglected, and offering at 130 rupees per ton. Cocoa had been sold during the week at 40¢ 47.50 rupees per cwt., and copra at 25¢ 36.25 per candy of 560 pounds; tea at 17¢ 92c. per pound as to grade. Exchange, 18. 5¼d.

### Chili.

Weber & Co., Valparaiso, August 8, state with reference to nitrate of soda that little was offered for sale, makers being under heavy contracts. There was at the same time a lack of vessels, so that comparatively little transpired, sales not exceeding 307,000 quintals at \$2.70 to \$2.72½, 95 per cent. At Iquique there were sold, besides, 90,000 quintals at \$2.70. The July shipments to Europe were 38,000 tons, and to the United States 2,000. There were loading August 1, 76,000 tons for the former and 7,000 for the latter. Charters during the fortnight, 19,200 tons for Europe. Copper did not vary in price from \$15.80 to \$16 per quintal, Europe coming unaltered per cable. The amount sold was 16,750 quintals at \$15.95. There was nothing doing in wheat for Europe; sales were restricted to a few lots at \$4.30 to \$4.50 the 166 pounds, free on board in Talcahuano Bay. Barley on the spot was worth \$4.40 the 155 pounds in bags free on board, and \$4.20 on the coast. Santiago brands of flour commanded \$8.30 to \$8.60 the two quintals., with 6 per cent. discount, and Southern brands \$8 to \$8.25. Exchange, 90 days, London, 25d.

### China.

Siemssen & Co.'s (Hong Kong) tea report of August 10 states, with reference to black at Shanghai, that all sorts over common have been in brisk de-

mand and firm during the fortnight. At Foochow congous were lively in common sorts at sustained rates; at Amoy the discouraging New York advices caused a tame market. At Hong Kong and Macao congous were plentiful and some concessions were being made; 2,600 boxes congou were taken at 15 to 28 taels per picul, 40,000 scented capers at 13 to 28, and 3,600 orange pekoes at 11 to 28.

#### TOTAL TEA SHIPMENTS FROM ALL CHINA TO DATE.

	Season 1887-8.	Season 1886-7.
To England.....pounds.	57,705,880	87,449,700
United States.....	7,515,619	9,921,604
Continent (without Russia).....	976,850	1,016,818
Russia.....	11,689,204	10,436,516
Australia.....	15,482,860	14,039,953
Totals.....	93,370,413	122,864,701

Tea imports of all sorts into England during the first eight months, 115,902,078 pounds, against 126,211,686 in 1886; consumption, 120,103,333, against 116,778,179. Stock September 1, 82,710,170, against 84,826,833 in 1886, and 79,870,780 in 1885.

### Cochin China.

Baehre & Co., Saigon, write about rice under date August 21: Chinese advices being less favorable the late advance has been lost, and the tendency, if anything, is decidedly downward, there being a great deal of rice in the interior and the crop prospect fair. Hence very soon there is going to be quite an accumulation at this point, when Manila and Europe will be able to operate to advantage. The fortnight's export amounted to 156,138 piculs; the purchases for Hong Kong will come to be shipped next, together with a few for Manila. Europe has this year so far only taken two cargoes of together 6,300 tons. We quote: No. 1 mill polished white, \$1.02 to \$1.04 per picul. Exchange, four months' credits, on Paris, 4.07 fra.

### Ecuador.

Reyre Brothers & Co. report from Guayaquil, September 19, that during the first half of the month cocoa receipts have reached 13,000 quintals, constituting since January 1 a total of 285,000 quintals. Arriba cocoa declined to \$22.50, while Machala was sustained. Unsold stock of cocoa at Guayaquil, 20,000 bags. On September 1 the European stocks stood as follows: 1887, 214,300; 1886, 154,300, and 1885, 134,000 bags.

### France.

Following is the general report relating to the sugar situation as given in the *Journal des Fabricants de Sucre* issue of the third week in September: The statistical position of the staple in all consuming countries continues to improve steadily, and notwithstanding some uncertainty as to the ultimate results of the European beet-root crops, it is probable that the world's supplies during the next twelve months will not be more than sufficient to meet the increasing consumption. The growing crops have been benefited by the rains, but the roots, though increasing in size, are apparently still smaller than last year's, and with present somewhat low temperature have for the moment slightly suffered in quality. It is still too early to form an exact opinion, but favorable weather in October will be required to bring the yield up to last year's. The visible supply in Europe and America, Cuba included, at this writing, is 808,629 tons, against 1,010,747 a year ago and 1,214,517 in 1885.

During the last week in September the vintage commenced in the Upper and Lower Médoc, the weather being clear and propitious; that in the Palus was to follow without delay. While the yield of the vintage in the Bordelais and in France generally will not be large, the quality is expected to turn out exceptionally fine.

Raw silk remained firm at Lyons, and nearly all spinners were under contract. Manufacturers were expected soon to replenish supplies, the outlook being reassuring, fashion favoring the wearing of silks, especially colored. Tissues dyed in the piece were, on the other hand, rather neglected. Prime Cevennes French raw 9 to 11 were bringing 61 fra. the kilog. Waste was declining, chappe not being in good position.

The French iron trade was causing some uneasiness, contrasting unfavorably with the activity ruling in Belgium, Germany and Austria-Hungary. At Paris iron was dull and weak at 13 fra. the 100 kilogs. merchant, and 12 fra. beams. In the provinces the demand was flat, and the outlook for the winter anything but reassuring.

### Germany.

The German vintage was favored in September by fine weather and warm nights, but grapes are nevertheless about three weeks backward in Rhenish Hesse, the Rheingau and Vochheim districts in consequence of the cool nights during the summer. The general yield on the banks of the Rhine, Nahe and Moselle may not quite be an average crop, but the quality is expected to be satisfactory. A little rain would bring the grapes to fine maturity. Wines of 1886 and previous vintages were in brisk demand at Mayence and elsewhere and bringing good rates, owing to the reduced supply of desirable wines.

The Rhenish-Westphalian iron market was doing well, and the impression was pretty much general that it would remain so from actual consumptive demand, and not merely because there is a speculative inquiry. Spiegel was wanted for the United States and other points at 50 to 51 marks per ton for 10 to 12 per cent. manganese. Wire rods were quoted 112 to 115 marks.

Beet-root sugar crop advices are to September 23, and the decline in prices is commented upon as follows: "Beet-root suffered a sudden heavy decline



early this week, when the Magdeburg syndicate were forcing sales of ready sugars from 12s. 6d. down to 11s. 9d., and new crop prices receded from 12s. 1½d. to 11s. 10½d., at which there are still sellers. Second runnings are 3d. to 6d. down, good quality offering at 10s. to 10s. 3d. The cause of this decline is not to be found in more favorable crop reports; on the contrary, Mr. Licht states that, with low temperature and high wind, the roots show very little progress in Germany. Some factories have begun work, and both weight and yield are not very satisfactory, but this is not yet a fair basis to estimate the total crop upon. In Austria some of the damage done by drought can probably not be made good, and the yield per acre will show some falling off in addition to short sowings. In Russia average estimates are now near 400,000 tons; in France the roots have made a fresh start since the rain, to the detriment of quality, and factories will begin late. The *Journal des Fabricants* expects not much more sugar than last year, but generally estimates are higher."

### Greece.

Advices about currants from Patras are to September 18, when the decline in the exchange disposed holders to shade prices. Little was doing in the provinces. There was some demand for Marseilles at 43 frs., cost and freight, and for Paris at 44, New York buying at the parity of 18.75 marks, cost and freight. Receipts for the week amounted to 2,000 tons, and total receipts since commencement of the crop to 15,000 tons. There was not much stock left that was available. The quotation at the close, per 50 kilogs., in barrels, free on board, was 19 marks prime Filiatra; 18.50 Provincial; Provincial common unrained, 18 in boxes; choice Vostriza 27.50; handsome, 26.50; Casalina Patras, 23.50, and Serraglio Patras, 21. Exchange, three months' sight on London, 31.50 frs. At Zante, September 13, the currant market was stiff and rising, the receipts being light and the demand brisk, at 18s. to 19s. 6d. free on board. For Marseilles 200 tons were taken at 46 frs., with freight. At Cephalonia similar prices were current; some small parcels Zante Casalinas brought 20s. 6d. free on board in barrels.

### Holland.

The *Nederlandsche Courant*, in its monthly coffee review for September, remarks that in spite of the Brazilian and Java lower crop estimates coffee does not advance for the present, because the deliveries are shown to have fallen off considerably since the commencement of the year, which is a proof that at the enhanced prices consumption diminishes on both sides of the Atlantic. The following statistics show the general developments in the coffee trade:

#### ARRIVALS DURING THE FIRST SEVEN MONTHS.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	258,150	215,400	288,330	259,260	309,970	262,280
America.....	127,131	135,266	129,789	112,056	177,755	112,836
Totals.....	385,281	350,666	418,119	371,316	427,745	375,116

#### DELIVERIES.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	228,050	250,350	252,180	219,010	244,070	221,680
America.....	106,980	135,553	136,867	120,181	118,208	116,623
Totals.....	335,030	385,903	389,047	339,191	362,278	338,303

#### STOCKS AUGUST 1.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	138,850	136,300	183,550	193,350	187,100	154,650
America.....	41,376	33,402	30,769	31,334	23,720	21,794
Totals.....	180,226	169,702	214,319	224,684	210,820	176,444

Add unsold in Netherland Trading Company's hands 1887, 244,535 bags; 1886, 275,714 bags; 1885, 551,696 bags.

#### AMERICAN MOVEMENT.

	1887.	1886.	1885.	1884.	1883.	1882.
Import during first seven months.....tons.	127,131	135,266	129,789	112,056	177,755	112,836
Consumption.....	106,812	135,301	136,774	120,081	110,553	111,044
Re-exports.....	168	249	93	100	7,655	5,579
Deliveries.....	106,980	135,550	136,867	120,181	118,208	116,623
Stock, August 1.....	41,376	33,402	30,769	31,334	23,720	21,794

### Italy.

As per advices from Genoa of the latter half of September the cholera in Sicily began to disturb the usual supply of wines from that quarter. At Montferrato good table wines were selling at 35 to 40 lire or francs, which includes the internal revenue of 10.50 lire. In the Turin market the wine trade has been active at 50 to 60 lire, prime quality, per hectolitre, and 42 to 48 seconds. In Casalmontferrato business in the branch was looking up at 12 to 30 lire as a range. On the shores of Lake Garda grapes were being sold at 15 to 16 lire the quintal. Chianti wine was bringing 47 to 53 at Leghorn, and in Barletta the range was 20 to 31. Trade has been picking up at Gallipoli, proprietors feeling disposed to sell new wines "to arrive." Grapes were being bought up at 7 to 8 lire the quintal.

At Bari the olive-oil market was brisk at 81.10 to 90.65 lire the 100 kilogs. for table oil. There was considerable uneasiness about the new crop, there having been in September some excessively hot days, the drought continuing uninterrupted, while some rain was indispensable to keep the fruit on the trees in good condition. In Tuscany the outlook, on the other hand, is reassuring. One-third of the product will at least be of good quality.

### Java.

The government coffee-crop estimate was during September again reduced to 336,450 piculs. In 1886 the yield of the government plantations was 816,932 piculs, against 439,833 in 1885, 1,011,787 in 1884, 1,083,000 in 1883, and 1,025,000 in 1882. Especially in the eastern portion of the island the amount of coffee that will be secured both by the government and private planters will considerably fall short of what had been expected. The private Java coffee crop is estimated at 150,000 piculs, against 275,000 in 1886. At the August Batavia government sale 20,000 piculs Malang brought 60.50 guilders per picul, and 5,000 Samarang 60.75. The Macassar crop will barely reach 5,000 piculs, and that of Timor 20,000. Adding thereto 10,000 piculs of other sorts, the total from that quarter will not exceed 35,000, against 124,800 in 1886 and 132,000 in 1885. Menado's production will only be 15,000 piculs, against 20,400 in 1886. The Padang upland coffee, which was sold at auction on June 28 at 60.30 guilders per picul, was since resold with a profit of 10 guilders per picul. Everywhere in the East Indies there are this year partial coffee-crop failures; those mentioned above show a joint shortage of 913,600 piculs as compared with 1886.

### Mauritius.

Following are the sugar-crop advices from Port Louis, dated August 27: "The rainfall we have had, while favoring the growth of the young canes, has delayed the maturing of those first to be ground; grinding, which had commenced on some estates, has thus been stopped for the present. Receipts will continue light as a consequence till about the middle of September, when there will be some supply to fill the Australian demand. Meanwhile some medium white was sold at 11.50 to 11.60 rs. the 50 kilogs. Shipments so far amount to 102,376 tons, against 115,299 same time last year and 127,784 in 1885. Vanilla Beans.—Fine quality is not in stock. Inferior has been selling at 12 to 14 rs. the kilog., and green 3 to 3½. Gathering has been going on briskly, the weather favoring the preparation of beans, and the yield will largely exceed last year's. Shipments for the past month reached 47 tons; prior thereto 15,434 tons had been shipped. Exchange declining; ninety days' credit bills on London, 40 to 42; on Paris, 38 to 39."

### Portugal.

*O Commercio do Porto* contains particulars of the August wine exportation thence, the shipments to Germany having been 179,221 litres; to Belgium, 8,650; Brazil, 1,306,231; Argentine Confederation, 50,493; Denmark, 34,428; United States, 17,436; France, 218,261; Spain, 260; Holland, 22,331; England, 1,003,450; Portuguese Africa, 2,984; Russia, 17; Scandinavia, 55,034, the total being 2,907,706 litres, against 2,211,712. The vintage was on September 24 in full swing nearly throughout the Portuguese wine regions. The yield will be very large and the quality probably the best since 1838, everything having favored the development and ripening of the grapes. The Regoa region is about the only district where the size of the 1886 crop will not be reached. New wines were selling to arrive there at 50 milreis the pipe, and much was obtainable at 300 reis the almod in a number of localities, there not being casks enough to place all the new wine into adegas. Common Portuguese wines of 1886 are still bringing 300 to 350 frs. at Bordeaux, and prime 400 to 600 frs. Portuguese wines have become very popular, not only at Bordeaux and other distributive centres in France, but quite as much elsewhere abroad.

### South Africa.

Poppe, Schumhoff & Guttery, Port Elizabeth, July 27, report about the wool market that the same has been paralyzed by the unfavorable result of the Antwerp sale. Holders were not inclined to make concessions in consequence, hence but little transpired, but the tendency was decidedly downward. Stocks of Uitenhage and country snow-whites were comparatively light, but of scoured and grease there were some 3,000 to 4,000 bales. Uitenhage snow-whites were bringing 15d. to 16d. per pound; country snow-whites, 13d. to 13½c.; country scoured, 11d. to 12½d. Fleeces were not in stock. Grease Wool.—Late receipts had chiefly consisted of Victoria West wools, utterly neglected, so that receivers cannot market them for the present. Super-combing and blue-grease for the Continent are not offering at all, while for washing purposes but little business has been transacted. Low and colored greases are fetching 3½d. to 3½d.; Uitenhage scoureds, 7½d. to 8d.; and country do., 6½d. to 7d. Exchange—Drafts on London, ninety days' sight, were bringing ¾ to 1 per cent. discount.

### Spain.

We read in the *Diario de Barcelona* of September 25 that at length some purchasers of new crop wines to arrive begin to make their appearance in the interior, and although not much business has resulted therefrom yet, the long spell of dullness has at least been interrupted. The Peninsular vintage was being proceeded with actively, both in Spain and Portugal, and in both countries it is large and the quality of wines will be an exceptionally good one. At Tarragona 1886 Priorat wines were quoted 40 to 50 pesetas the cargo of 121 litres for good quality, while inferior was not worth over 30 to 33. Country wines were worth 18 to 20 pesetas; Vendrell, 20 to 25, and Montblanch, 16 to 22. At Barcelona wines suitable for shipment to transatlantic countries were neglected at \$27 to \$28 the Catalan pipe for Cuba, and \$38 to \$39 for the Rio de la Plata. The Barcelona alcohol market was higher in response to more favorable accounts from abroad. The quotation was \$61 to \$62.50 for good quality, and \$64.50 to \$66 for prime the 516 litres, with cask, in store.



## Straits Settlements.

Gilfillan, Wood & Co., Singapore, report under date August 24 that quite a business has been transacted in gambier. Some 950 tons changed hands at lower rates, say at \$6.65 down to \$6.50, and 90 tons small cubes at \$10.35 to \$10.30. No. 1 gum damar has moved off to a moderate extent at \$24.75 for fine quality and \$16 Lingu. Sumatra gum benjamin brought as to quality within the range of \$12 to \$32. Gutta-percha was wanted, but receipts were light and high prices asked, so not much transpired therein. Amboyna cloves were scarce and in demand at \$40 to \$50; this was also the case with nutmegs, which were bringing \$1.00 to \$1.10 to the pound. Mace was sparingly offered at \$80 to \$90. Arrivals of black pepper were not copious, but it was neglected and obtainable lower; 170 tons fetched \$23.70 to \$23, and 55 tons \$23.25. White pepper was drooping, 50 tons being sold at \$38.55 to \$38. Pearl sago was quiet and lower, 75 tons changing hands at \$2.30 to \$2.35. Great activity was noticeable in sago flour, 75 tons Singapore being taken at \$1.92½ to \$1.95, 200 Borneo at \$1.87½, and 210 Sarawak at \$1.97½ all per picul. Exchange on London, six-months' sight credits, 38. 2½d.

## Venezuela.

Caracas advices are dated August 17. During the week there arrived on the La Guayra market 2,288 bags of cocoa, 2,189 thereof from Rio Chico, Higuerote and Curiepe, and 76 from Choroni, Ocumare, Chuas and other Sotavento localities, 23 from other points. Last year, same time, the receipts were 2,748 bags. The demand being slack, prices are drooping. We quote: Rio Chico, dark, \$21; ditto rose color, \$22; superior Ocumare, \$40, and Choroni, \$37 to \$38. Shipments to Europe, 146 tons. Coffee is quiet at \$25 washed La Guayra. Shipments to Europe, 95 tons.

## West Indies.

CUBA.—The total yield of the sugar crop of 1887 is estimated at 629,768 tons, as against 731,779 tons in 1886, showing a decrease of 102,011 tons. The exports to June 30 had been 424,716 tons, against 414,255 to the corresponding date in 1886, still leaving a stock at the time of 165,052 tons, against 246,514 last year.

According to the *Gaceta* the Cuban custom-houses collected during the fiscal year of 1886-7, \$13,352,204 of revenue, against \$13,307,762 the previous fiscal year, there thus being an increase of \$44,442.

The real-estate owners in Havana have petitioned the Cortes for a reduction of the high taxes they pay at present. The petition states that if their request is not granted, their capital will soon be absorbed in taxes.

A Havana chemist has discovered a process by which, it is said, tobacco can be thoroughly cured in a few days, and by which tobacco in bad condition can be restored to its original elasticity and flavor.

On September 24 stocks of sugar in Havana and Matanzas were reduced to 21,000 boxes, 298,000 bags and 2,300 hogsheads, and fair to good refining was worth \$1.87½ to \$2.18½ per quintal.

TRINIDAD.—Port of Spain, September 2.—E. P. Masson writes about sugar: Some rainy days have interrupted the dry spell, so that the canes begin to flourish once more. The little left over from the old crop is being consigned abroad for planters' account. Since January 1 there have been shipped 26,381 hogsheads, 11,933 tierces and 317,918 bags, against 21,579 hogsheads, 10,839 tierces and 188,825 bags last year. Cocoa—Receipts have been trifling; the little that sold was within the range of \$15.75 to \$17, as to quality. Since January 1 there were shipped 57,521 bags, against 78,413 same time last year. The stock is now pretty much exhausted, and will remain so till November-December, when the gathering of the new crop will commence, provided the weather proves favorable enough. Asphaltum moves off steadily at \$9 per ton boiled and \$3 crude. Export since January 1 29,578 tons, against 22,614 last year. Exchange.—Colonial Bank bills, ninety days' sight, are bringing \$4.86.

If all things continue to go as well as they are doing, the Glasgow International Exhibition will be opened in May next year. The ground to be occupied by the exhibition buildings extends to ten and a half acres, and already the framework of the central hall is being carried forward to completion. The artisans' section is expected to be instructively complete, and an exceptionally interesting exhibition of pictures is being arranged. The fine arts committee have now issued their prospectuses, applicable to the sale and loan sections. The art galleries are to be ten in number, occupying an area equal to 3,200 square yards, and affording about 2,450 lineal feet of hanging space. It is proposed that objects illustrative of Scottish history and archaeology shall be placed in a separate building, especially constructed for the purpose. Electric light will be used throughout the exhibition, and the mode of its application in the fine art galleries will obviate the risks incidental, under other conditions, to the use of artificial lights. It is contemplated that music, both choral and orchestral, shall enter largely into the daily life of the exhibition. At the Edinburgh Exhibition of last year the section devoted to women's industries proved so popular that three times as much space will be allotted to the same purpose at the Glasgow Exhibition. It will be divided into three sections, one for England and Wales, another for Scotland, India, the colonies and foreign countries, and another for Ireland.

## Review of the Markets.

## Reports for the Month Ended October 1.

**Butter.**—Receipts, especially of extra grades of creamery, are moderate. Prime grades have a moderate inquiry, but lower grades are moving slowly. State dairy tubs are in fair demand. Imitation creamery, Western dairy and factory are selling in a small way. We quote: Creamery, 18@26c.; State dairy, 17@24c.; Western, 13@19c.

**Cheese.**—The general run of fancy is quoted at 12c. for both light and colored, but there is only a light business. The market is barely steady. We quote: Factory, best white, 12c.; do., best colored, 12c.; do., good, 10½@11½c.; light skims, medium, 8@8½c.; skims, prime, 9c.; do., common, 4@6c.; Ohio factory, fine, 11@11½c.; do., fair, 9½@9¾c.

**Coffee.**—Brazil grades—Values for spot invoices are on a slightly lower plane. Holders have shown more of a disposition to sell at current quotations, and this fact has led to increased business. On the basis of 19½c. for fair the market has ruled steady, with fair offerings. Late sales were Santos, No. 8, at 17½c.; Rio, No. 8, at 17½c. Options have shown a downward tendency. The monthly Rio coffee statement of William Scott's Sons is as follows:

Stock in warehouses September 1, 1887	bags.	453,273
Received since—		
At New York	bags.	107,792
Baltimore		2,997
New Orleans		12,520
		123,309
Total supply		576,582

Delivered from warehouses since—		
At New York	bags.	181,543
Baltimore		15,014
New Orleans		3,920
		200,447

Stock in warehouses October 1, 1887—		
At New York	bags.	320,840
Baltimore		38,765
New Orleans		16,500

Total stock		376,105
Afloat and loading for United States to August 30		9,500
Purchased for United States to September 30 (53,000 bags Santos)		108,000

Total visible supply October 1, 1887 bags. 493,605

**Mild Coffees.**—East India grades have ruled quiet and steady, but no fresh business of importance has transpired, although about 3,800 piculs September Padang are said to be in treaty. Holders ask 25c., but 24½c. is the best obtainable bid. Immediately after the sale was announced here a larger quantity was placed at 24c. West India grades have been in moderate request, with further sales of second-hand lots. The supply in second hands, as well as dealers' stocks, is getting reduced, and first holders are feeling more confident. Cutcuta invoices are obtainable at 19½c., with buyers at 19½c. Late sales include Maracaibo, Porto Cabello, and Savanilla. We quote: Rio, ordinary cargoes, per pound, 18½c.; fair do., 19½c. good do., 19½c.; prime do., 19½c. Santos, fair to good cargoes, 19½@19¾c.; Java, 21@27½c.; Singapore, —@—c.; Ceylon, 22@23c.; Maracaibo, 19½@20½c.; La Guayra, 18@20½c.; Jamaica, 17½@19c.; San Domingo, —@—c.; Porto Rico, —@—c.; Central America, 18@20½c.; Mexican, 18@20c.; Angostura, —@—c.; Savanilla, 18½@21c.; Mocha, 24@25½c.

**Cotton.**—The demand for "spot" continues light and prices closed 1-16@1/8c. off, middling closing at 9½@9¾c. In options the movement has been slow. Closing figures were: October, 9.23@9.24c.; November, 9.17@9.18c.; December, 9.17c.; January, 9.22@9.23c.; February, 9.30@9.31c.; March, 9.39@9.40c.; April, 9.47@9.48c.; May, 9.54@9.55c.; June, 9.62@9.63c.; July, 9.68@9.70c.

**Dry Goods.**—Business for the past month has been large—larger in fact than surface indications would lead one to suppose, and toward the close trade was much more active, owing in part to the easier position of the money market. In woolen goods the new business has been somewhat irregular. Light-weight woollens are in moderate request, while stocks in agents' hands are in prime condition. Overcoatings are in steady delivery on old orders, while there is a fair movement on re-orders. Heavy-weight suitings have been in good sale, light weights are irregular, satinetts are moving freely and doeskin jeans are in fair delivery, a large part of present production being placed for later delivery. Soft wool dress fabrics have been moved in a satisfactory way, fancy knit woollens are less active, while underwear and hosiery have shown more life in the way of orders for spring delivery. While cotton goods have shown less activity, as is usual at this period, orders have been sufficient to absorb production of leading lines. Exporters have cleaned up some lines pretty well, and would probably have done more had their ideas of values been somewhat higher. Prints have been in moderate demand for new assortments and sales correspondingly small, but through deliveries on engagements in process very fair to good results were realized. In the way of job lots, through the cleaning up of many odds and ends a good quantity was disposed of, which leaves stocks generally in very good condition as to character and quantities. Dress goods have been quiet in new request and aside from moderate quantities of a *passé* order the new business was light, though through forwardings on orders considerable business was done. The mills are hurrying the accumulation of spring stocks in expectation of an earlier than average movement, while orders of special descriptions have been placed for delivery in advance of such engagements in past seasons.

**Drugs and Chemicals.**—The market is without important change. There is a moderate trade in progress, mostly of a jobbing character. We quote: Bleaching powders, \$1.95@1.97½; caustic soda, \$2.40; soda ash, \$1.25@1.27½; sal soda, \$1.20; acetic acid, 2½@2½c.; oxalic acid, 8@8½c.; citric acid, 50@51c.; tartaric acid, 43@45c. for crystals; acetate of lime, 1.80@1.85c. for brown;



aloes, 5½¢ for Cape; alum, \$1.75@1.87½ for lump and \$1.87½@2 for ground; ammonia carbonate, 7½¢ for English; assafoetida, 9¢@10¢; arnica flowers, 6½¢@8¢; albumen, 15¢@16¢ for foreign blood; arsenic, 2½¢@2½¢; balsam copaiva, 36¢@41¢; balsam tolu, 38¢; balsam Peru, \$1.15@1.20; bichromate of potash, 10½¢ for Scotch; borax, 6¢@6½¢ for refined; blue vitriol, 4½¢@4½¢; brimstone, \$1.75@1.79 for seconds; buchu leaves, 6½¢ for shorts and 24¢@25¢ for longs; cantharides, \$1.70@1.80 for Russian; camphor, refined, 22¢; castor oil, 17¢@18¢ in bbls. and cases; cardamoms, 6¢@8¢ for Aleppo and 75¢@1 for Malabar; cassia buds, 10¢@10½¢; camomile flowers, 20¢@25¢ for Roman and 15¢@21¢ for new German; cutch, 7½¢@7½¢; chlorate of potash, 15¢@15½¢ for crystals and 15¢@15½¢ for powdered; cochineal, 29¢@30¢ for Teneriffe silver; cream tartar, 34¢@35¢ for crystals and 35¢@36¢ for powdered; gambier, 5½¢@5½¢; ginger, 16¢ for Jamaica bleached and 10½¢@13¢ for unbleached; glycerine, 22¢@24¢; Guarana, \$1.35@1.45; iodide of potash, \$2.70@2.83; licorice paste, 28¢@29¢ for P. & S. and 30¢@32¢ for Corigliano; manna, 46¢@47¢ for small flake and 82¢@85¢ for large flake; morphine, \$3.20@3.50 for domestic; opium, \$4.40@4.50 for new, duty paid; oil cloves, \$1.70@1.85; oil cassia, 62¢@63¢; oil anise, \$1.95@2; oil lemon, \$1.75@1.85, as 10 brand; oil sassafras, 42¢@46¢; oil wintergreen, \$2@2.05; oil bergamot, \$1.75@2.62½; oil peppermint, \$2.25 in tin and \$3 in glass; prussiate of potash, 18½¢@19¢ for American yellow; quicksilver, 55¢; quinine, 35¢@37¢ for German and 40¢@42¢ for American; roots, 3½¢@4¢ for gentian; Seneca root, 30¢, and Colombo root, 7½¢@12¢; ginseng, \$1.80@2; sarsaparilla, 7¢@7½¢ for Mexican; seeds, 7¢@8¢ for Trieste brown mustard and 4½¢@4½¢ for California yellow; senna, 30¢@32¢ for Alexandria; shellac, for D. C. 18¢@19¢ per lb.; V. S. O., 15¢ per lb.; I in diamond, 13¢@13½¢ per lb.; sticklac, —¢ per lb.; sugar of lead, 5½¢@5½¢ for brown and 12¢ for white; tonka beans, \$1.25@1.40 for Angostura.

**Freights.**—The situation in the freight market is in nowise improved, and the prospect for the immediate future is anything but flattering. Tonnage, while not excessive, is nevertheless in excess of requirements; hence rates for almost everything favor the shipper. Grain offerings continue moderate and rates are nominal, one engagement affording little criterion to the next. All the steamers are asking more, but shipments are checked and rates at this writing are wholly nominal. Oil chartering is slow, and rates rather favor the charterer, though not notably lower. In cases a vessel has been taken to Calcutta at 18½ cents and Rangoon 20. Miscellaneous chartering is also slow, and no improvement has been anywhere developed. The River Plate business continues slow, but former rates on lumber are maintained. West India vessels are in limited supply, and, being in better request, the advantage is in favor of the owners. In the coastwise lumber trade \$6@6.25 and wharfage has been paid from Fernandina. Colliers remain unchanged.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provis'ns.	Cheese.	Beef.	Pork.	Cotton.
Liverpool	2	5.	7.0	10.	7.6@10	15.	1.9	1.9	½d.
Glasgow	1½¢@2	6.	7.6	10.	17.6	22.6	3.	2.	....
Bristol	2½	8.9	10.	10.	12.6@20.	30.	3.6	2.9	....
Leith	3 asked.	10.	11.3	12.6	15@17.6	22.6	3.6	2.6	....
Hull	2	8.9	12.6	11.3	16.3@20.	22.6	4.	3.	....
N'wcastle	3 asked.	10.	12.6	11.3	17.6@20.	25.	4.	3.	....
Antwerp	3 asked.	10.	12.6	11.3	17.6@20.	25.	4.	3.	....
Hamburg	30	..	..	..	15@17.6	..	..	9-64s-32	..
Bremen	..	..	..	..	1m.	..	..	3-16d.	..
Copenh'n	15. @18. 6d	..	..	..	20.	..	..	3-16d.	..
Marseilles	28. 3d.*	..	..	..	20.	..	..	..	..

\* Store.

Cork for orders, sail, 3s. 6d. Steam, 2s. 9d. Direct port, United Kingdom, 3@6d. less.

#### OIL QUOTATIONS.

	Refined Petroleum.	Naphtha.	Cases.
Cork and United Kingdom	2.00@2.9	2.3@3.	Levant..... 14@15
Direct port, United Kingdom	1.11½@2.6	2.1½@2.6	Adriatic..... 13@14
Direct Continent.....	1.11½@2.6	2.1½@2.6	Mediterranean. 12@14
Baltic.....	..	..	..

**Fruits.**—The market for foreign dried is quiet, steady, and on some descriptions firm. There is a fair jobbing business. We quote: California raisins, to arrive, price at shipping point, \$1.70; California, London, \$1.80; new loose Malaga, \$2.25; new, London, \$2.70@2.75; Sultana, 7½¢@7½¢; new Valencia, 8¢; new Valencia layers, 10¢; new Valencia, to arrive, 7¢. Almonds—Princess paper shelled, 21½¢@22¢; Valencia, shelled, 27¢; Jordan, 40¢; Tarragona, 15¢; Ivica, 14½¢. French sardines, 11¢@11½¢ for quarter boxes and 15¢@17¢ for half boxes. Citron, 18¢@18½¢. Currants, 6¢; do, to arrive, 5½¢@5½¢. Figs, 9½¢@15¢. Turkey prunes, 3½¢@3½¢; do, shipments, 3 13-16¢. French prunes, to arrive, 60's and 90's, half boxes, 10¢@10½¢; French prunes, to arrive, 40's and 60's, quarter boxes, 14¢; Bohemian prunes, 3¢. Grenoble walnuts, 13½¢; French, do., 14½¢. Naples do., 14½¢. Sicily filberts, 7½¢@7½¢. Dates, 4½¢@5¢ for Persian in boxes; 6¢ for fards, and 7½¢@7½¢ for cases. Brazil nuts, 6¢@6½¢; Chili walnuts, new, 8½¢@9¢. In fresh fruits apples are about steady, grapes are in fair demand and cranberries are firm, with demand and supply moderate. In domestic dried, evaporated apples continue easy in price and are in moderate call. We quote: Apples—Choice to fancy evaporated, 9½¢@10½¢; common to prime evaporated, new, 8¢@9¢; sliced, new, 5¢@8¢; chopped, 2½¢@3¢; cores and skins, 2½¢@2½¢. Cherries, pitted, 18¢@20¢; raspberries, evaporated, new, 25¢@26¢; blackberries, prime, new, 8½¢@9¢; huckleberries, new, 10¢. Peaches, sun-dried, peeled, new, 16¢@20¢; Delaware, evaporated, peeled, 28¢@32¢; Delaware, evaporated, unpeeled, 16¢@18¢.

**Flour and Meal.**—State, Western and city flour is barely steady under a light inquiry from home trade and a moderate demand from shippers. We quote: No grade, \$1.90@2.10; fine, \$2.10@2.85; supers, \$2.60@3; extras, No. 2, \$3.10@3.50; extras No. 1, \$3.40@4; clear bakers', \$3.75@4; straight bakers', \$4@4.25;

patents, \$4.25@4.85; city extras (European), in 140-lb. sacks, \$3.50@3.80; city West Indies, \$4.20@4.25; city patents, \$4.30@4.75. Southern flour is in moderate demand and prices are unchanged. We quote: Fine, \$2.25@2.75; supers, \$2.75@3.10; extras, \$3.25@3.75; Richmond first, \$4.85; Richmond second, \$4.50; patents, \$4.50@4.75. Rye flour is steady, but the demand is light. We quote: Fine, \$2.15@2.25; superfine, \$3.20@3.50. Corn meal is in fair demand. We quote: Western kila dried, \$2.60@2.80; do. white, \$3.10@3.75; Brandywine, \$2.90@2.95; Western bags, 90¢@1.25.

**Grain.**—Wheat options closed at a decline owing to large increase in visible supply. Closing prices were: October, 81½¢; November, 81½¢; December, 83½¢; January, 85¢. Cash wheat has been in moderate request and prices are steady. Spring wheat is scarce and held at extreme figures, the advance in Liverpool being an offset to the increase in the visible supply. Closing sales were at 86½¢ for No. 1 hard October shipment from Duluth. 82½¢ for No. 2 Chicago, 80½¢ for No. 2 Chicago spring in store, 87½¢ for No. 1 hard afloat, 86½¢@87¢ for do. c. i. f., 81½¢ for No. 2 red f. o. b., 82½¢@83½¢ for do. afloat, 78¢@83½¢ for ungraded. Corn options were fairly active and full prices have ruled. Closing figures were: October, 52¢; November, 51½¢; December, 52½¢; January, 52¢; May, 53½¢. Cash corn has been in fair demand, and with light receipts better prices have obtained. Closing sales were at 52½¢@53¢ for No. 2 afloat, 52¢@53¢ for ungraded. Options in oats have moved fairly at about steady prices. Closing figures were: October, 33¢; November, 33½¢; December, 33½¢; May, 36¢. Cash oats have ruled firm under a fair demand. Closing sales were at 37¢ for No. 1 white, 35½¢@35½¢ for No. 2, 34½¢ for No. 3, 34¢ for No. 1 mixed, 32½¢@33¢ for No. 2, 32½¢ for No. 3, 31¢ for rejected, 34½¢ for No. 2 Chicago, 33¢@34¢ for mixed on track, and 35¢@40¢ for white on track.

**Leather.**—There has been some little increase in the demand for hemlock from manufacturers and jobbers, and on all desirable grades previous prices are well sustained. Several large parcels have been taken by speculators in the expectation of realizing better prices later on. Best and second selections of backs of Union tanned sell readily. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 19¢@20¢; middle do., 20½¢@21¢; heavy do., 20½¢@21¢; light seconds, 18¢@19¢; middle do., 18½¢@19¢; heavy do., 18½¢@19¢; damaged, all weights, 16¢@17¢; common hide, light, first selection, 17½¢@18¢; middle do., 19¢@20¢; heavy do., 20¢@21¢; light seconds, 16¢@16½¢; middle do., 17¢@18¢; heavy do., 17½¢@18¢; damaged, all weights, 15¢@16¢; rejects, 12¢@12¢; acid hides of all kinds, light, first selection, 17¢@17½¢; middle do., 19¢@20¢; heavy do., 20¢@21¢; light seconds, 16¢@16½¢; middle do., 17¢@18½¢; heavy do., 18¢@20½¢; damaged, all weights, 14¢@15½¢. *Union Tanned*—Slaughter light backs, 20¢@30¢; middle backs, 28½¢@30¢; middle backs, heavy, 29¢@30¢; second backs, 26¢@27¢; light crop, 25¢@27¢; middle crop, 25¢@27¢; crop seconds, 24¢@25¢; bellies, 13¢@13½¢. *Calcutta Buffalo*—Light, 15¢@16¢; middle, 15¢@16¢; damaged, 13¢@14¢; poor damaged, 10¢@12¢.

**Lumber.**—The distribution in this line hardly comes up to expectations. Offerings are looked at quite critically in the matter of quality, but taken altogether there is a fair outlet for arrivals. Lath has been more plenty and lower, closing at \$2.05@2.10 per M. for Eastern. Quotations are: Spruce, random cargo, \$12.50@16.50 per M. feet; do., special cargo, \$17@18. White pine, South American shippers, per M. feet, \$28@29; do., West India shippers, \$17@19; do., box boards, \$15@18. Yellow pine, random cargo, \$19@21; do., special cargo, \$20@22; do., green flooring boards, \$18@19; do., dry flooring boards, \$21@23; do., siding, \$21@24; do., cargoes, f. o. b. Atlantic ports, rough, \$13@15; do., cargoes, f. o. b. Atlantic ports, dressed, \$18@20; do., cargoes, f. o. b. Gulf ports, rough, \$12@14; do., cargoes, f. o. b. Gulf ports, dressed, \$19@21.

**Metals.**—Pig Iron—American pig has been in moderate demand and with offerings abundant but not excessive, good brands are steadily held. We quote: Standard Lehigh and North River brands \$20.50@21.50, for No. 1 X foundry, the outside price being for small lots from dealers \$19@19.50 for No. 2 X, and \$17@17.50 for gray forge, ordinary brands of the latter being obtainable at \$15.50@16. Scotch Pig—The market is dull and easier, with supplies offered at lower prices, but very little disposition to buy, the demand having been of the usual jobbing proportions. We quote: Coltness, \$21.50@21.75; Glengarnock, \$20.25@20.50; Gartsherrie, \$21@21.25; Summerlee, \$20@21.50; Eglinton, \$20; Langloan, \$20.50@21; Dalmellington, \$20@20.25, and Clyde, \$20@20.25. Bessemer Pig—Nothing of interest has transpired, and with the demand unimportant prices are entirely nominal. Foreign quoted \$20@20.50. Steel Rails—No important business has transpired, and the market has ruled dull. Mill agents quote \$36@37 for deliveries covering the remainder of this and the early months of next year. Old Rails—The market is without quotable change or new feature, consumers having shown very little desire to buy. Tees have been offered at \$22.50 and D. H.'s \$23 from store, but buyers' views are lower, and these prices fail to attract attention. Scrap—Dull and nominally quoted at \$21@22 from yard and \$20.50 ex-ship. Lead—The market has ruled quiet but firmer, in consequence of lighter offerings and less disposition to sell. Car lots have sold at 4.45@4.47½¢, with round lots at 4.40¢ offered and 4.50¢@4.55¢ asked. Tin—The market has continued quiet, with a moderate demand for spot and prompt delivery, and dealers have paid 23½¢ from dock for 10-ton lots, but for futures the feeling has been dull and easier, in sympathy with lower quotations from London. At the close 22.00¢ was bid for spot and October, with sellers at 23.40¢ spot and 23.05¢ October. November offered at 22.80¢ and December 22.70¢, with five points lower bid. The jobbing demand has been fairly active and supplies are being closely absorbed. We quote for jobbing lots of Banca 23½¢@23½¢; Straits and Malacca, 23.60¢ cash, and 23.70¢ 30 days. Billiton, 23½¢@23½¢; Australian, 23.60¢ cash 23.70¢, 30 days, and English L. & F. 23½¢@23½¢. Tin Plates—The demand for spot lots has been light and only of jobbing proportions, but prices have undergone no important change. Futures have received a little more attention and moderate sales are reported at easier prices. We quote: Charcoal, ½ cross assortment, Melyn grade, \$5.15@5.20, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$4.70, each additional X add \$1; charcoal terne, M. F. grade, 14x20, \$6.30; M. F. grade, 20x28, \$12.80; Worcester, 14x20, \$4.70@4.75; Worcester, 20x28, \$9.50; Dean grade, 14x20, \$4.70@4.75.



4.35; Dean grade, 20x28, \$8.90; Allaway grade, 14x20, \$4.20; Allaway grade, 20x28, \$8.60@8.65; I. C. coke—B. V. grade, \$4.45@4.52½; J. B. grade, 14x20, \$4.60@4.62½; I. C. Bessemer steel, squares, \$4.50@4.52½ basis; I. C. Siemens steel, squares, \$4.64 basis.

**Molasses.**—The local demand for grocery descriptions has continued fairly active, and the market has ruled steady. There is some inquiry for export to Canada, but the only grades suitable for that market, English Islands, are held at 28c., which is above buyers' views. New Orleans—The limited supply of old crop has been slow of sale, but is steadily held. New crop is selling in occasional lots of 1 to 2 bbls. at 55@60c. Sugar House—No fresh business has transpired, and values are nominally 11@12c. for ordinary and extra heavy. Syrup—There has been no improvement in the demand for straight sugar grades, and the market has ruled dull and in buyers' favor for all except the commoner kinds, of which the production has been light and the demand fair. We quote common to fine, 21@29c.; Cuba, boiling, 1@—c.; Porto Rico, 25@38c.; Barbadoes, 23@28c.; New Orleans, common to fair, 30@35c.; do., fair to good, 36@40c.; do., prime to choice, 40@50c.; do., fancy, 52@53c.

**Naval Stores.**—The market for spirits of turpentine is rather firmer, in sympathy with the West, values closing at 33c. asked. Rosins are steady and in moderate inquiry. We quote: Common, \$1.05@1.10; good strained, \$1.10@1.12½; E, \$1.20; F, \$1.30; G, \$1.40; H, \$1.45@1.47½; I, \$1.55@1.60; K, \$1.67½; M, \$1.80; N, \$1.95; W G, \$2.30@2.35, and W W, 2.90.

**Paper.**—Manillas are still strong, and a leading manufacturer has issued notice that owing to the unsettled condition of the jute market no orders will be considered accepted until they are acknowledged. Book and news mills, especially the latter, are crowded with orders. A movement is on foot looking to a united advance of ¼c. on the prices of writings. Straw wrappings are in good movement, and owing to restricted production manufacturers are doing a very satisfactory business. We quote: Fine flat caps, 13@15c.; superfine, 16@17c.; record and ledger, 18@22c.; supersized and calendered book, 7@8½c.; do. do., extra machine finish, 7@7½c.; do. do., low grade, 6½@7½c.; news, No. 1, 5c.; do., rag and wood, 4½@5c.; do., straw, 5½@5½c.; manillas, No. 1, light weight, 7½@8c.; do., heavy weight, 7@7½c.; No. 2 manillas, 5@6c.; bogus do., 2½@3c.; straw wrapping, heavy weight, 1½@2c.; do., do., light weight, 2¼@2½c.

**Petroleum.**—"Certificates" closed stronger and higher, final prices being 68½@68¾c. Refined barreled oil was in only moderate demand, but the market retains a firm tone, with prices standing at 6½c. for 70° Abel test. Case oil remains firm at 8½c. for plain brands, but business is only fair and the demand devoid of spirit. Crude in barrels quoted at 5½c. for Bradford and 6½c. for Parker. Naphtha quoted at 7½c. for prime city. Home trade late barreled oil quoted at 7c. for 110° test standard white; 7½c. for 120° test do.; 7½c. for 130° test do.; 8½c. for State test do., and 8½@8¾c. for 150° test water white.

#### EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO OCTOBER 1.

	1887.	1886.
From Boston.....gals.	3,277,547	4,091,492
Philadelphia.....	122,384,453	112,706,856
Baltimore.....	6,496,152	12,581,444
Perth Amboy.....	12,556,608	3,998,017
Totals.....gals.	144,715,060	133,377,809
From New York.....	280,124,231	296,838,339
Total exports from United States.....gals.	424,839,291	430,216,148

**Provisions.**—Lard—Options have been slow and closed a shade low. Final prices were: October, 6.75; November, 6.71; December, 6.70; January, 6.75; February, 6.80; March, 6.90; April, 6.90. "Cash" lard is quiet, prices closing easy; quotations being: Prime Western steam, \$6.85; city, \$6.70; Continental, \$7.70; South American, \$7.35@7.50. Pork—The market has had considerable business, owing to wide fluctuations, but mostly in January options. "Cash" has been more active but closed lower. We quote: Mess, \$14.50@14.75; new mess, \$15@15.25; extra prime, \$14; clear back, \$16@16.50; family winter, \$15.50; new, \$18@19. Bacon is quiet and nominal, quotations being: Long clear, 8.35c.; short clear, 8.50c.; half each, 8.42½c.; short rib, 8.35c.; long clear West, 8c.; short clear, 8.15c. Cut Meats—The market remains dull at the recent decline and prices are nominal, considerable sales at Chicago comprising smoked shoulders at 5c. future delivery. We quote: Pickled shoulders, 5½@6½c.; do. hams, 11½@12½c.; do. bellies, 10@10½c.; smoked shoulders, 6½@7c.; do. hams, 12½@13½c.; do. bellies, 11½@12½. Beef continues in fair request at steady prices. We quote: Mess beef, \$7@9 per barrel; plate, \$10; choice do., \$10.50; packet, \$8.50@9; extra India mess, \$11.50@12 per barrel, \$15@18 per tierce. Beef Hams—The market is dull, but prices are nominally the same. We quote \$16@16.25.

**Staroh.**—There has been a fair jobbing demand for Western corn, and prices are firmer, quotations being 2½c. for bbls. and 2½c. for bxs. Potato is firm at 4½c.

**Stearine.**—Lard stearine is quiet for full lots of city, for which 7½c. would be paid, small lots being taken at 7½c.; oleomargarine firm at 6½c.

**Sugar.**—Raw—There is a fair amount of business in raw sugars, and with the growing demand the market has ruled stronger, while offerings have grown light. The demand has been chiefly for Muscovado grades, which have sold on the basis of 4 13-16c. for 89 test, with 4½c. paid for one small desirable lot to an out-of-town buyer; but, while sellers' views are generally on this basis, 4 13-16c. has been the best obtainable bid. Centrifugals have sold at 5 7-16c. for 96 test, which is an advance of 1-16c. since our last issue, but there has been less inquiry for these, and sellers generally ask 5½c. The uncertainty of the distributive demand for refined is the only neutralizing feature in the otherwise strong position of the market. The offerings are quite limited, and purchases could only be made at full prices, say 3½@3 3-16c. for 96 test centrifugals. Late sales have been as follows: Cuba centrifugal, 95½ test, 5½c.; Trinidad centrifugal, 95.70 test, 5½c.; Barbadoes Muscovado,

basis 87 test, 4 11-16c.; Trinidad Muscovado, basis 88 test, 4 13-16c.; Breakwater to Boston; Aracaju, basis 83 test, 4½c.; Cuba centrifugal, basis 96 test, 5 7-16c.; Cuba molasses, 89 test, 4 10-16c.; Rio Grande, 85.10 test, 6.25c.; do. do., 85½ test, 4½c.; Cuba Muscovado, basis 89 test, 4½c.; Cuba molasses, basis 89 test, 4½c.; Pernambuco, 86.80 test, 4 11-16c.; Trinidad, 88.30 test, 4½c. Refined—The demand has been moderate, and the market is about steady. We quote, less drawbacks, for export: Cut loaf, \$4.05; cubes, \$3.93; crushed, \$4.05; powdered, \$3.93; granulated, \$3.81.

**Tea.**—The market generally has ruled quiet. The line trade has shown no improvement. Large resales of speculative holdings have been made of old crop Formosa and Amoy oolongs on the basis of 17@18 cents for good cargo Formosa and 13 cents for Amoy. The principal demand at private sale for new crop Formosa is for goods grading strictly superior, the auction-room supplying dealers with the lower grades. The market for Japans continues rather weak for all descriptions, but in Japan is firm and active. Pingsueys have been saleable to the trade at about previous prices. The result of the closing auction sale was as follows: Moyune hyson at 12@22c., young hyson at 9½@39c., imperial at 10½@24c. and gunpowder at 21@42c., Pingsuey young hyson at 10½@13c., imperial at 19½@24c. and gunpowder at 13@34c.; Japan, pan-fired at 12@25c., basket-fired at 14@29½c., sun-dried at 17c., siftings at 4@10½c., congou at 14@25½c. and India and orange Pekoe at 17½@27c.; oolong, Foochow at 12½@19c., Formosa at 16½@29c. and Amoy at 13@15c.

**Tobacco.**—For Kentucky there has been an increased inquiry, with sales of 1,400 hhds., of which 1,000 were taken for export, presumably for Spain. The market continues very strong. We quote: Common lugs, 4½@5½c.; good, 5@7c.; low leaf, 6½@8½c.; good, 9@11½c., and fine, 10½@16c. Virginia continues in moderate demand only, with sales reported of small lots bright smokers and a few long blacks for export. The frost does not appear to have done much damage. Cigarette stock is held high, and bright wrappers sell well. We quote: 5@7c. for common to good lugs, 7½@9½c.; for common to medium leaf, 10½@11½c.; for medium to good dark do. and 12@13c. for good to fine dark do.; common to medium bright wrappers, 21@24c.; fair to good, 25@35c.; fine do., 35@50c.; common smokers, 6@10c.; good do., 12@15c.; fine cutters, 22½@27½c. Seed continues in demand at firm prices. Sales, 1886, New England, at 11@40c., 13@20c.; 1886, State Havana, 8@17½c.; 1886, Dutch, 9½@11c.; 1886, Ohio, p. t., and Wisconsin Havana, 7@12c. Foreign is unchanged. Sales Havana at 60c. @ \$1.10, and Sumatra at \$1.40@1.75.

#### STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuegos.	Yara.
Stock September 1, 1887.....bales.	41,343	..	....	29	1,232
Received since.....	9,994	10	....	30	218
Totals.....bales.	50,337	10	....	59	1,450
Delivered since.....	13,750	10	....	20	318
Stock October 1, 1887.....bales.	36,633	....	....	39	1,132

**Wool.**—The market remains in the same condition of quietude, and although prices are without noteworthy change the tendency is unmistakably in favor of the buyer. Late sales are very light, comprising delaine pulled at 35c.; medium scoured, 37c.; scoured California, 53c.; X and XX Ohio, 32@33½c.; fine delaine, 36c.; ¼ combing, 39@40c.; ¾ clothing, 38c.; ¾ unwashed 29@30c.; also scoured, 50,000 lbs., do., in the grease, 3,600 lbs. black Territory, 7,500 lbs. noils, 105 lbs. East India, 12,000 lbs. Montevideo, 50,000 lbs. pulled extra, on private terms; also considerable amounts of carpet wool on private terms, and 60,000 lbs. pulled wool without rates.

SOME valuable statistical information was lately made available with reference to the production and consumption of coal in France. It appears that the extraction of coal and lignites from the French soil last year was as follows: Coal, 19,558,928 tons; lignites, 455,669 tons; total, 20,014,597 tons. In 1885 the corresponding figures stood thus: Coal, 19,068,548 tons; lignites, 441,982 tons; total, 19,510,530 tons, showing a general increase for last year of 504,067 tons. French coal is beginning to drive foreign coal out of French markets to some extent, the total imports of foreign coal last year into France having been 9,425,487 tons, as compared with 9,943,469 tons in 1885, showing a reduction in imports last year of 517,982 tons. The close approximation of the decline in the imports to the increase in the output last year was certainly not a little remarkable. Of the coal imported into France last year, 3,470,612 tons came from England, 3,917,036 tons from Belgium, 973,314 tons from Germany and 5,243 tons from other countries. The imports of English coal into France last year fell off 184,708 tons, as compared with 1885, while the imports of Belgian coal declined to the extent of 124,410 tons; those of German coal to the extent of 135,981 tons, and those from other countries to the extent of 185 tons. Belgian coke was imported into France last year to the extent of 783,187 tons, German coke to the extent of 263,026 tons and other coke to the extent of 13,069 tons. These figures, when compared with those for 1885, show reductions of 67,628 tons, 4,917 tons and 153 tons respectively. The falling off in the imports of foreign coal into France last year was most marked in the case of German coal, which showed a decline of rather more than 10 per cent. The corresponding decline in the case of Belgian coal was about 4 per cent., and in the case of English coal 5 per cent.



**Exports of Domestic Merchandise (Values Stated) from all Ports of the United States for the Month  
Ended August 31, 1887.**

<b>Agricultural implements—</b>		<b>Fruits, preserved—</b>		<b>Oils—</b>	
Horse-powers.....	\$697	Canned.....	26,104	<b>Vegetable—</b>	
Mowers and reapers, and parts of.....	135,490	Other.....	4,187	Cotton seed.....	91,873
Plows and cultivators, and parts of.....	39,023	All other, green, ripe or dried.....	47,170	Linseed.....	4,533
All other, and parts of.....	66,700	Nuts.....	2,253	Volatile or essential.....	14,155
<b>Animals—</b>		Furs and fur-skins.....	47,259	Other.....	8,167
Cattle.....	1,277,804	<b>Glass and glassware—</b>		Ore, gold and silver bearing.....	308
Hogs.....	17,803	Window glass.....	720	Paints and painters' colors.....	34,734
Horses.....	26,810	All other.....	59,558	<b>Paper, and manufactures of—</b>	
Mules.....	8,359	Glucose or grape sugar.....	9,574	Paper-hangings.....	4,685
Sheep.....	8,791	Glue.....	1,623	Writing-paper and envelopes.....	6,826
All other, and fowls.....	2,817	Grease, grease scraps and all soap stock.....	74,756	All other.....	48,884
<b>Art works: paintings and statuary.....</b>	<b>8,726</b>	<b>Gunpowder and other explosives—</b>		Paraffine and paraffine wax.....	148,798
Bark, and extract of, for tanning.....	48,595	Gunpowder.....	3,355	Plated ware.....	72,553
Billiard and pool tables and apparatus.....	1,848	All other.....	21,006	<b>Provisions, comprising meat and dairy products—</b>	
Blacking.....	17,093	Hair, and manufactures of.....	30,602	<b>Meat products—</b>	
Bones, hoofs, horns and horn tips, strips and waste.....	12,479	Hay.....	27,138	<b>Beef products—</b>	
<b>Books, maps, engravings, etchings and other printed matter.....</b>	<b>104,450</b>	Hides and skins, other than furs.....	37,813	Beef, canned.....	347,414
<b>Brass, and manufactures of.....</b>	<b>23,553</b>	Honey.....	343	Beef, fresh.....	484,196
<b>Breadstuffs—</b>		Hops.....	7,554	Beef, salted or pickled.....	168,234
Barley.....	42,562	Ice.....	9,889	Beef, other cured.....	.....
Bread and biscuit.....	56,490	<b>India-rubber and gutta-percha, manufactures of—</b>		Tallow.....	451,582
Corn.....	813,041	Boots and shoes.....	5,987	<b>Hog products—</b>	
Corn meal.....	76,232	All other.....	59,291	Bacon.....	2,557,408
Oats.....	10,606	Ink, printer's and other.....	9,396	Hams.....	433,811
Oatmeal.....	12,209	<b>Instruments and apparatus for scientific purposes, including telegraph, telephone and other electric.....</b>	<b>52,690</b>	Pork, fresh.....	.....
Rye.....	63	<b>Iron and steel, and manufactures of—</b>		Pork, pickled.....	296,695
Rye flour.....	721	Iron ore.....	1,300	Lard.....	1,474,954
Wheat.....	12,240,396	Pig iron.....	11,721	Mutton.....	3,098
Wheat flour.....	5,406,266	Band, hoop and scroll iron.....	1,690	<b>Oleomargarine—</b>	
All other breadstuffs.....	67,289	Bar iron.....	4,815	Imitation butter.....	5,548
<b>Bricks—</b>		Car-wheels.....	3,561	The oil.....	518,781
Building.....	1,604	Castings, n. e. s.....	20,440	Poultry and game.....	476
Fire.....	3,046	Cutlery.....	11,524	All other meat products.....	50,112
Broom corn.....	1,787	Firearms.....	46,895	<b>Dairy products—</b>	
Brooms and brushes.....	20,630	Ingots, bars and rods of steel.....	961	Butter.....	488,527
Candles.....	8,510	Locks, hinges, and other builders' hardware.....	136,870	Cheese.....	1,904,310
Carriages and horse-cars, and parts of.....	52,045	Machinery, n. e. s.....	362,071	Milk.....	16,109
Cars, passenger and freight, for steam railroads.....	87,714	Nails and spikes.....	34,470	<b>Quicksilver.....</b>	<b>19,580</b>
<b>Casings for sausages.....</b>	<b>87,714</b>	Plates and sheets—		Rags.....	4,363
<b>Chemicals, drugs, dyes and medicines—</b>		Of iron.....	458	Rice.....	797
Acids.....	9,235	Of steel.....	1,674	Salt.....	2,690
Ashes, pot and pearl.....	2,332	Printing-presses, and parts of.....	12,546	<b>Seeds—</b>	
Dyes and dyestuffs.....	62,250	Railroad bars or rails—		Clover.....	28,549
Ginseng.....	40,402	Of steel.....	3,215	Cotton.....	750
Medicines, patent or proprietary.....	135,068	Saws and tools.....	92,808	Flaxseed or linseed.....	29,404
Roots, herbs and barks, n. e. s.....	9,164	Scales and balances.....	17,091	Timothy.....	1,345
All other.....	180,247	Sewing machines, and parts of.....	18,142	All other.....	28,450
<b>Clocks and watches—</b>		Steam-engines, and parts of—		Silk, manufactures of.....	5,229
Clocks and parts of.....	84,551	Locomotive engines.....	42,380	<b>Soap—</b>	
Watches, and parts of.....	13,122	Stationary engines.....	16,349	Toilet or fancy.....	4,308
<b>Coal—</b>		Boilers and parts of engines.....	19,459	All other.....	52,791
Anthracite.....	606,801	Stoves and ranges, and parts of.....	23,292	Spermaceti and spermaceti wax.....	12,747
Bituminous.....	185,384	Wire.....	20,581	Spices, ground or prepared.....	1,747
Coffee and cocoa, ground or prepared and chocolate.....	5,459	All other manufactures of iron and steel.....	187,290	<b>Spirits—</b>	
<b>Copper, and manufactures of—</b>		<b>Jewelry, and manufactures of gold and silver.....</b>	<b>37,636</b>	Alcohol.....	8,052
Ore.....	191,573	Lamps and illuminating appliances.....	44,017	Pure, neutral, or cologne spirits.....	.....
Ingots, bars, and old.....	74,957	Lead, and manufactures of.....	7,828	Rum.....	5,153
Sheets.....	141	<b>Leather, and manufactures of—</b>		Whiskey.....	23,180
All other manufactures of.....	4,381	Leather—		Bourbon.....	81,251
<b>Cotton, and manufactures of—</b>		Ruff, grain, splits, and all finished upper leather.....	284,441	Rye.....	22,694
Unmanufactured—		Patent or enameled.....	21,027	All other.....	.....
Sea Island.....	10,686	Sole.....	461,841	<b>Spirits of turpentine.....</b>	<b>378,000</b>
Other.....	4,551,800	All other.....	50,104	Starch.....	18,411
<b>Manufactures of—</b>		<b>Manufactures of—</b>		Stationery, except of paper.....	25,686
Cloths, colored.....	126,071	Boots and shoes.....	59,205	Stereotype and electrotype plates.....	3,376
Cloths, uncolored.....	572,880	Harness and saddles.....	28,299	Straw and palm leaf, manufactures of.....	4,597
Wearing apparel.....	22,905	All other.....	8,466	<b>Sugar and molasses—</b>	
All other.....	82,518	<b>Lime and cement.....</b>	<b>8,466</b>	Molasses and syrup.....	117,903
<b>Earthen, stone and china ware—</b>		<b>Malt liquors—</b>		Sugar, brown.....	716
Earthen and stone ware.....	20,404	In bottles.....	44,544	Sugar, refined.....	213,672
Chinaware.....	2,422	Not in bottles.....	4,826	Candy and confectionery.....	6,814
<b>Eggs.....</b>	<b>2,758</b>	<b>Marble and stone, and manufactures of—</b>		<b>Tin, manufactures of.....</b>	<b>12,490</b>
Fancy articles—		Unmanufactured.....	11,661	<b>Tobacco, and manufactures of—</b>	
Perfumery and cosmetics.....	35,251	Manufactures of—		Unmanufactured—	
Toys.....	4,906	Roofing slate.....	5,956	Leaf.....	4,011,052
All other.....	23,593	All other.....	37,727	Stems and trimmings.....	33,594
<b>Fertilizers.....</b>	<b>35,979</b>	<b>Matches.....</b>	<b>3,958</b>	<b>Manufactures of—</b>	
<b>Fish—</b>		<b>Musical instruments—</b>		Cigars.....	2,977
Fresh, other than salmon.....	303	Organs.....	33,004	Cigarettes.....	42,186
Dried, smoked or cured—		Pianofortes.....	13,510	All other.....	246,791
Codfish, &c.....	52,745	All other, and parts of.....	11,101	Trunks, valises and traveling-bags.....	13,006
Herring.....	5,119	<b>Naval stores—</b>		Umbrellas, parasols and sunshades.....	47
Other.....	4,571	Rosin.....	177,319	Varnish.....	12,513
Pickled—		Tar.....	1,479	<b>Vegetables—</b>	
Mackerel.....	6,106	Turpentine and pitch.....	3,430	Beans and peas.....	30,885
Herring.....	476	Oakum.....	1,878	Onions.....	4,665
Other.....	9,506	Oil-cake and oil-cake meal.....	391,895	Potatoes.....	30,817
<b>Salmon—</b>		<b>Oils—</b>		Vegetables, canned.....	18,268
Canned.....	517,370	Animal—		All other, including pickles.....	10,355
Other.....	5,780	Lard.....	48,250	<b>Vessels sold to foreigners—</b>	
Canned fish other than salmon.....	3,334	Sperm.....	13,398	Steamers.....	1,390
Shell fish—		Whale and fish.....	27,575	Sailing vessels.....	.....
Oysters.....	16,355	Other.....	40,508	Vinegar.....	970
Other.....	23,584	<b>Mineral, crude, including all natural oils, without regard to gravity.....</b>	<b>402,313</b>	Wax, bees'.....	2,686
All other fish.....	742	<b>Mineral, refined or manufactured—</b>		Whalebone.....	63,328
<b>Flax, hemp and jute, manufactures of—</b>		Naphthas, including all lighter products of distillation.....	58,249	<b>Wine—</b>	
Bags.....	31,396	Illuminating.....	3,759,004	In bottles.....	2,284
Cordage.....	49,711	Lubricating and heavy paraffine oil.....	305,282	Not in bottles.....	15,594
Twine.....	90,569	Residuum, including tar and all other, from which the light bodies have been distilled.....	6,557	<b>Wood, and manufactures of—</b>	
All other.....	7,257			Firewood.....	166
<b>Fruits, including nuts—</b>				<b>Lumber—</b>	
Apples, dried.....	10,843			Boards, deals, and planks.....	668,645
Apples, green or ripe.....	22,590			Joists and scantling.....	8,590



Wood, and manufactures of—		Wood, and manufactures of—		Wool, and manufactures of—	
Shooks—Box.....	7,434	Moldings and other house-finishings...	9,305	All other manufactures of.....	7,554
Other.....	35,367	Hogsheads and barrels, empty.....	6,971	Zinc, and manufactures of—	
Staves and headings.....	135,513	Household furniture.....	190,380	Ore or oxide.....	854
All other lumber.....	128,914	Wooden ware.....	21,787	Pigs, bars, plates and sheets.....	89
Timber—		All other.....	99,304	All other manufactures of.....	351
Sawed.....	188,494	Wool, and manufactures of—		Articles not elsewhere enumerated—	
Hewed.....	62,664	Wool, raw.....	460	Unmanufactured articles.....	35,794
Logs, and other timber.....	103,087	Carpets.....	460	Manufactured articles.....	35,930
Manufactures of—		Flannels and blankets.....	2,930		
Doors, sash and blinds.....	47,260	Wearing apparel.....	34,107	Total value of exports for the month.....	\$54,427,681

## General Notes.

THE German military balloon department is said to be making experiments with a view of trying the effect of hurling down masses of dynamite on fortifications.

FIVE hundred thousand dollars are now invested in the marble business in Pickens County, Ga., and 300 men are employed, the output of marble being 1,000 feet per day, supplying forty gangs of saws. A new mill, with twenty-four gangs of saws, is under construction, and when finished will be the most complete marble plant in the world. This immense industry is the result of only three years' work, and is destined to grow to an almost unlimited extent.

PROFESSOR MALLET has analyzed a specimen of volcanic ash collected on the Pacific coast in Ecuador, 120 miles west of Cotopaxi. The ash fell on July 23, 1885, and formed a deposit to the depth of several inches. The interesting feature in the composition of the material was the presence of a small amount of silver, probably as silver chloride; several experiments showed that silver was present to the extent of one part in 83,600 of ash. This is the first time that silver has been identified in material ejected from a volcano.

THE asphaltum beds of San Luis Obispo, Cal., consist of sandy rock, impregnated with the hydro-carbon. The size of the grains composing this sandstone is from fine sand to the thickness of a man's thumb. Taken fresh from the quarry the rock looks dark brown to black; in the heat of the sun detached pieces become soft and can be pulled asunder and the asphaltum drawn out in sticky fibres. Over miles of country are these hydro-carbonaceous deposits spread out, with no other over-lying formation than the fertile soil and the vegetation which it produces.

GELSOLINE is the name of a new material resembling silk. A writer in the *Journal Commercial et Maritime* says of it that two students in Italy have invented an apparatus the object of which is to substitute mulberry fibre for cotton, and have given it the above name. On removing the bark from the young shoots of mulberry trees a fibre is found which in fineness and tenacity is not exceeded by silk, and the object of the invention is to treat the bark and isolate the fibre by a mechanical process. The English houses are said to have already made offers to purchase the entire production emanating from this novel process.

A FLORIDA company, engaged in the manufacture of perfumery, has built a factory at Jacksonville, and next spring will start a twenty-acre flower plantation. It now has one plantation at San Mateo, and is putting seven acres at Jacksonville in flowers. It has 5,000,000 flowering tuberose bulbs, and 100,000 rose geraniums, in addition to which it buys all the roses, yellow jasmines, orange blossoms, &c., that it can secure. This is an industry that ought to prove profitable. It is another illustration of the diversification of the industrial interests of the South, and of the many openings for the manufacture of small things that the South offers.

A NEW electric permutation safe lock has just been patented by a Chicagoan which differs materially from all other safe locks in the fact that there is no other orifice to speak of in the door of the safe. The dial, which is such a conspicuous feature on the ordinary safe, has no connection in this invention, except by electric wires, with the body of the safe, and may lie on the cashier's desk or repose securely in his home, free from any possible violence of the burglar's hammer. There is, in fact, no limit to the distance that may intervene between the dial and the safe lock, granted that the connection is satisfactory and the battery sufficiently strong. A safe might perfectly well rest in a Chicago office and only be opened by means of a dial in New York. The mechanism is very simple. The dial rests in a

magnetic block, from which wires extend and communicate with magnets which set up the tumblers in the lock, and so permit of the throwing back of the bolt-bar. This releases a spring or body of compressed air, as the case may be, which in turn releases the heavy bolt-work. The wires penetrate the top plate of the safe at the jamb of the door, and move in a zigzag course through the inner plates to the lock. The wires are so small and their course so crooked that it is claimed they cannot be traced by explosives. A current of electricity is obtained from several small batteries by pressing down a key on the vulcanite block that holds the dial. The dial when not in use can be detached from the vulcanite block and carried in the pocket. The door of a safe whose lock is controlled by this electric apparatus will present to the burglar none of the spindles which penetrate the walls of the ordinary safe and yield so conveniently to the influences of the blow-pipe, but simply a knob for opening the door which only penetrates the first plate.

IN the production of silk no country, excepting China, can approach Italy. In good years the quantity of silk produced in Italy has been estimated at about 60,000 cwt. For 1885 it was valued at something over these figures. Gradually Italian silk farmers have returned more and more to indigenous silkworm stock, which produces a better quality and a larger yield of silk than the imported varieties, Japanese and others, introduced into Italy during the prevalence of the silkworm disease. For 1886 it is estimated that fully half of the silk produced was from indigenous stock. The industry of silk spinning has in Italy assumed gigantic proportions; the number of spindles is put at over 2,000,000. The silk-weaving industry has its centre at Como, with 8,000 hand-loom looms out of a total throughout Italy of 13,000. The silk fabrics produced in Italy have attained a great degree of perfection, and such as to rival those of France. There seems to be no reason why the export trade in them should not obtain a great extension. Prices of silk have of late years fallen heavily, and the margin of profit for the farmer as well as the spinner is reduced to narrow limits.

NATURAL gas burns absolutely without smoke, dust or odor. Beautifully decorated tiles used in the construction of a fireplace are not stained or soiled after a whole year, although they may have been in contact with the flames of the gas for months. The most delicate furniture and fabrics are not injured by being kept in a room heated by it. In fact, they retain their original freshness and beauty as though they had been carefully protected by covering. The natural gas requires no attention. Lighted at the beginning of the season in a furnace, stove, grate or fireplace, and the proper amount turned on to give the required degree of heat, the latter will not vary so much as two degrees in months. But, since with the varying temperature of the outer atmosphere varying degrees of artificial heat are required to preserve uniformity in an apartment or house, artificial regulators are supplied by which the amount of heat of each room can be governed so accurately that the variations of temperature will never be greater than two degrees, except during the heat of summer.

THE amalgam process of extracting gold from ground ore, especially the "tailings," which has been devised by Mr. Molloy and taken up by the Hydrogen-Amalgam Company, is now in operation abroad. It consists in placing the mercury in a flat pan, having a flat disk floating on the mercury; this surrounds a porous pot containing a lead anode in a solution of sulphate of soda; the cathode is the mercury itself, and the current is obtained from a small dynamo. The ground ore, with water, is fed in between the porous pot and the disk, and a circular motion is given to the disk, so as to spread the ore under it through the mercury, thus bringing every particle of ore into contact with the mercury before urging it out at the rim of the disk by centrifugal force. The electric current develops hydrogen at the mercury, and thus cures its tendency to oxidize and become ineffective,



or, in technical terms, to "sicken." It is claimed that 40 per cent. more gold can be extracted from the ore in this way than by the ordinary amalgam process, and that the waste of mercury by oxidation is prevented.

A VERY simple voltaic cell has been devised by Dr. Massey, of Philadelphia. This element, which is said to maintain a nearly constant electro-motive force of one volt, is constructed of a rod of carbon and zinc bound together by india-rubber straps; small blocks of the same material are placed between the rods and prevent short circuiting. The terminals are attached to the upper extremities of the carbon and the zinc, the former being treated with melted paraffine in the usual way. The exciting fluid consists of a solution of ammonium chloride and potassium bichromate in water.

ELECTRIC heat indicators are valuable means of preventing spontaneous combustion at sea. They consist of thermometers incased and protected by iron tubes, provided in a well-known manner with platinum wires and connected to a system of electric bells and indicators on deck. These thermometers are distributed among such dangerous cargo as coal, cotton, &c., liable to spontaneous combustion. Should any undue heat arise in any part of the cargo the mercury in the thermometers will rise, make contact with the platinum wires, and give an instantaneous alarm on deck, at the same time indicating the exact spot where such dangerous heat does exist.

THE world's production of raw wool is stated at 790,000,000 pounds for 1850; 955,000,000 pounds for 1860, and 1,911,000,000 pounds for 1886. The average yield of clean wool was 65.1 per cent. in 1850, 63.9 per cent. in 1860, and 54.5 per cent. in 1886. Here is an interesting fact to note, that there has been a gradual tendency to a heavier production of animal grease or extraneous matter in the fleece till there is at the present time but little over 50 per cent. of the weight of the fleece that can be utilized for manufacturing purposes. Statistics, however, are not necessary to demonstrate what has been patent to every observer of the universal direction of sheep breeding toward the heavy fleeced merino. This is as applicable to America as to all other countries. Within the thirty-six years under review the production and consumption of clean wool has increased nearly 103 per cent. The consumption per head of population is now reckoned at 2.66 pounds of clean wool, against 1.93 pounds in 1850 and 2.33 pounds in 1870.

THE French Minister of Public Works has commissioned M. Anglé-Baumanoir, a Parisian civil engineer, to conduct a series of experiments at Havre on the production of electricity for lighthouse purposes by wind power, an arrangement which has recently been patented by M. le Duc de Feltre. For this purpose a windmill thirty-nine feet in diameter has been constructed in this country, and will be employed in driving a dynamo which charges a set of accumulators, from which the actual supply for the lighthouse is taken. The dynamo, which is shunt wound, is designed to run at a variable speed, while maintaining throughout the whole variation a constant difference of potential at its terminals, this condition being fulfilled by altering the resistances in the main and shunt circuits as the speed changes. Should the experiments prove successful the system may come into extended use, as the expense of maintenance would be reduced to a minimum, but on the other hand the cost of an installation would probably be increased, and accumulators are still too "kittle cattle" for much reliance to be placed on their good behavior in such trying situations.

A LARGE and profitable industry that has been established in Philadelphia, New York, Boston and Portland is the re-boiling of foreign molasses for the purpose of obtaining therefrom the crystallizable sugar that it contains. About 200,000 hhd. of molasses from Cuba and the other near West India islands are treated in this way, the product of sugar being sold to refiners, while the residuum, which in the trade is known as blackstrap, is used for distilling, and is largely bought for export to Europe, France being the largest consumer. The operations of these boiling establishments, the largest of which are located in Philadelphia, resulted this year in producing about 57,000 tons of low-grade sugar, against 65,000 tons last year. According to recent advices from Havana, a proposition has been made that the island of Cuba should take this industry in hand, and thereby retain a business that would yield a handsome profit. The Havana *Boletín Comercial*

advocates the establishment at the principal shipping ports of Cuba of refineries for thus treating molasses, and, as Cuba is the largest producer, if the project should be carried out, it would shut up the boiling-houses in this country.

THERE is one thing about tobacco that has always surprised microscopists and which is highly favorable to that distinguished weed. It is the purest of all vegetable substances when placed under the microscope. There is an entire absence of micro-organisms of every description. While almost all things in nature, even some of the acids, are alive with animated substances—bacteria, animalculæ, microbes or fungi of some kind—tobacco is entirely free of everything of the kind. It presents nothing to the microscope but its fibres and texture—its organic structure. Nor does the condition appear to change. All through the different processes of its manufacture, after being removed from the stalk, it presents the same appearance. The microbe appears to shun tobacco, probably because of its destructive qualities to the lower organisms.

### Catalogues and Price-Lists.

#### TO READERS.

THE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of THE MAIL in which they are noted.

BROWN & BESLY, Chicago, Ill., U. S. A.—Descriptive and illustrated catalogue of letter-files, filing cabinets, &c.

MODEL MANUFACTURING COMPANY, Philadelphia, Pa., U. S. A.—Illustrated catalogue and price-list of hardware specialties.

TREVOR & CO., Lockport, N. Y., U. S. A.—Catalogue and price-list, with illustrations of special wood-working machinery.

KNICKERBOCKER COMPANY, Jackson, Mich., U. S. A.—Illustrated catalogue of flour milling machinery.

BAIN WAGON COMPANY, Kenosha, Wis., U. S. A.—Illustrated catalogue and price-list of farm, freight and spring wagons.

WILCOX & HOWE, Birmingham, Conn., U. S. A.—Illustrated catalogue and price-list, 192 pages, of carriage hardware.

GRISER MANUFACTURING COMPANY, Waynesboro, Pa., U. S. A.—Price-list and descriptive catalogue, fully illustrated, of farming engines, separators, &c.

C. L. PRITCHARD, Dubuque, Ia., U. S. A.—Illustrated price-list of wagon and canopy tops, cushions for carriages, &c.

EDWARD BARR COMPANY, New York, N. Y., U. S. A.—Descriptive catalogue of automatic fire-sprinklers for factory protection.

GOULDS MANUFACTURING COMPANY, Seneca Falls, N. Y., U. S. A.—Handsomely illustrated catalogue—in Spanish—of pumps, hydraulic machinery, &c. This work comprises 144 pages and cover, and contains also price-lists and full explanations of the goods illustrated.

### Business Notices.

THE Jeffrey Manufacturing Company (formerly the Lechner Manufacturing Company), Columbus, Ohio, U. S. A., is the sole manufacturer of Legg's patent coal-mining machines, and owners of coal mines or parties wishing to develop such property are invited to correspond with this firm.

THE Roller Chain Belting Company, of Columbus, Ohio, U. S. A., manufacturer of detachable chain belting and mining machinery, has purchased a three-acre tract of land and will at once erect a new plant. This company's business has grown to such an extent that its present works are inadequate to supply the demand for its machinery. Foreign manufacturers and owners of mines who are not informed as to the advantages which this company can offer in the way of chain belting and machinery are invited to address the company for information.

LA compañía, The Goulds Manufacturing Company, Seneca Falls, N. Y., E. U. de A., para la conveniencia del gran número de compradores, ha un catálogo ilustrado y lista de precios, en Español, de bombas aspirantes y repelentes para aljibes y pozos, bombas repelentes, bombas para fuerza de viento, bombas de rotación y de incendio, campanas de amalgama de acero, desgranadores de maíz y otras mercaderías de hierro. Incorporado en lo mismo son los anuncios de muchos de los fabricantes principales en los Estados Unidos. Este catálogo es completo en el ramo de bombas, máquinas, arietes y maquinaria hidráulica.



# AMERICAN MAIL

DEVOTED TO THE

Manufacturing and Producing Interests of the United States.

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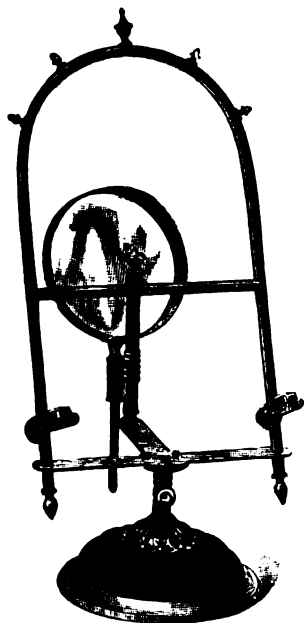
## American Novelties in Fancy Goods.

NOVELTIES AND NOTIONS—DEMAND FOR ORIGINALITY—METAL WORK—  
PLUSH GOODS—LEATHER GOODS—LIBRARY APPURTENANCES.

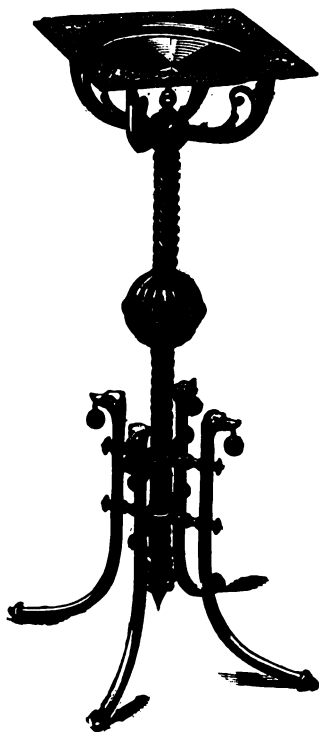
**A** MERICAN taste runs largely to the invention of that large line of goods which is covered by the terms novelties and notions. While other countries and manufacturing centres are content to turn out from year to year the same lines with little deviation from the originals, and still less variety, the American market runs through the whole range of every conceivable material and design, with the

of the "novelty" manufacture. But if we except certain special lines, such as the more substantial leather goods, dressing-cases and the like, there is little that is not made upon our own shores. It is true that we still go to Berlin and Vienna for such specialties as ornamental and colored glassware, terra-cotta and bronzes, but in the main the mass of the novelties in plush, leather, glass and metal that are to be found in the market are of our own manufacture, and the direct result of our own originality, both as to methods of manufacture as well as in the general make-up and idea of the article itself.

In brasswork from an ash-tray to an elaborate easel, chair or screen, there is little that is not beautified or wholly made from this highly



EASEL—BRONZE, SILVER AND COPPER.



CARD-RECEIVER IN BRASS.



UMBRELLA-STAND

result of educating the public to expect new things and to purchase them. Each year finds new factories started, new concerns developed, with all of the appliances for manufacturing, designing, shipping, packing and selling novelties from one end to the other of this vast continent, and the great majority of them thrive and grow rich as a direct result of their enterprise and invention.

The Americans as a race have been taught to expect novelties, and the proportions of the demand and supply are increasing at about equal rates.

In England, Birmingham, that city of smoke and long chimneys, once reigned supreme as the originator of new and useful devices of this description in metal, or rather hardware, which latter term, for some occult reason, included also the articles in wood and glass used by the stationer. There, too, pens are made, pencil-cases, metal Christmas cards, toys, out-door games, and, in fact, every branch of commerce in which stationers' sundries plays a part, for the stationers' stock nowadays covers, if we except jewelry, pretty nearly the whole field

attractive metal. Inkstands, whisk-broom holders, odor-cases, photograph frames and easels, tables, smokers' sets, cuff and collar boxes, match and cigar boxes, candlesticks, card-receivers and lamp-stands are some of the more common articles manufactured at popular prices, all exhibiting that taste and finish which render them in most instances veritable little works of art. In repoussé work and embossing, chasing and casting many of the fine effects of the old masters of the art are reproduced with great fidelity, and each year shows the benefits and influence derived from the technical schools of art and design, coupled with practical teaching in the handicrafts, that are springing up in all of the larger cities of the United States.

In the matter of novelties made from plush there would seem to be no end. The demand for novelties in this material would seem to come from the ladies, with whom the fabric is an undoubted favorite, and justly so, combining, as it does, the elements of richness, brilliancy and durability, and at a figure which enables fancy cases, pocket-books and boxes to be made from it at a reasonable figure. If





SCREEN—BRASS MOUNTED.

we consider for a moment the innumerable articles made from this material within the last few years, we shall see that it enters largely into articles for personal decoration, and is also to be found in furniture and fancy articles, which are all indebted to it for their best effects.

Work-boxes, manicure sets, purses, glove-boxes, odor-cases, inkstands, toilet-cases, photograph albums, clock-cases, ladies' shopping-bags, photo frames, shaving-cases, plush-covered tables, stools, mats, poker-boxes, card-cases, lap-tablets, frames of all kinds, autograph and scrap albums are a few of the articles to be seen made in this ever-popular material, and which, although it has had a long reign, seems, if possible, to be increasing rather than waning in popularity. In style and finish and invention in these goods there is nothing to be desired, and in the matter of the combination cases many of them are veritable surprises of ingenuity in the arrangement of their various drawers and shelves and the methods by which all the parts are sometimes displayed by the single operation of opening the lid, the action of shutting it also closing each of the parts and consigning them to their respective places. For the most part these are made of silk plush, satin-lined and sometimes ornamented with bronze birds or animals, and occasionally with heavy plaques of alto-relievo figures in electro bronze and representing with fidelity some well-known picture or sculpture of the Middle Ages. The fittings are usually of celluloid, zylonite or some similar composition, in which material ivory, both modern and antique, tortoise-shell and other materials are reproduced with a fidelity that almost baffles detection. The plush and silk, as well as the fittings, are the direct products of this country, and as such attest the strides which have been made in those important industries during the last decade.

In leather goods it is difficult to give a list which would give any adequate idea of the extent of the novelties in the various leathers, whether stamped, embossed, colored or gilt, and these, in combination with olive and other native woods, are the basis of some of the most beautiful and substantial of all the articles which are made for the novelty trade. Albums, books, purses, necessaires, cuff and collar boxes, razor and brush cases, bags for traveling and shopping purposes, photo frames, screens, folding and otherwise, albums and letter-files are all made in one or more of the leathers or their imitations.

To the successful imitation of the higher priced leathers, such as

russia and morocco, and which are too expensive in themselves to be used largely in the more popular lines and qualities of goods, must be attributed the success which novelties made up in these materials have had in all parts of the world. The alligator-skin has made itself fashionable and sought for wherever leather is used, and scarcely less popular is the soft and pliable seal, which lends itself readily to the needs of finer work, such as "lap" tablets, purses, &c.

It has long been a conceded fact that the Americans excel in the manipulation of cloth bindings of all kinds and descriptions, and the finish and the appropriateness of the designs have called forth the unstinted praise of the bookbinders of other countries. Albums, both autograph and photograph, are made in the best style with this finish; the cloth used is of assorted colors, either hard or padded, embossed and stamped in gold or black, with birds, fruit or flowers the interior being made of the finest papers, those known as cream or seashell being the most common. Other albums in imitation calf or Japanese leatherette, with plush insertions, will serve to show the variety and scope of the goods made from these materials. The art of producing mosaics is also being extensively used in leather work, the pieces being variously colored, some being given metallic hues, others a transparent glaze over another color. These are, in some instances, attached to a hardwood ground, framed the depth of the pieces, which latter are shaped with the knife as required, and so neatly is the work performed that no lines are shown between the separated pieces.

In painting on leather there is no end to the beauty of the designs produced. Gold leaf is extensively used on plain or embossed leather, and it constitutes an excellent background, the irregular particles of surface affording a play of light and shade.

The list of bijou or minor articles of a heterogeneous nature is too extensive to be more than glanced at, although such articles as are used, comprehended under the head of stationers' sundries, are well worthy of note. Inkstands in the form of prismatic glass have assorted colors, porcelain tooth-pick holders, glass perfumery stands, puff-boxes, barrel and pear shaped, chased and engraved and silvered,



CHAIR IN BRASS AND PLUSH.



are side by side with inkstands in solid or antique brass, nickel or enameled metal, or leather and metal in combination. Inkstands in cut-glass or polished black walnut; inkstands in plush, with thermometer cut-bottle, pen-rack and ornamented nickel figures, are a few of the features in this line of articles for library and office use.

In thin sheet brass there are many beautiful things made in the shape of trays and plaques by the process of cold hammering, and of the very thinnest metal many effective panels are made for cabinets, boxes, &c.

Culling at random from a list of articles which have been placed before the trade this season a number of illustrations are presented. These only outline the ideas expressed, for it would be impossible to present every feature of novelty with which the market abounds. In brass goods illustrations are given of a screen, card-receiver, chair, easel, &c., all of which indicate the style and purpose of articles of their class, and an umbrella-stand in brass, with daisy pattern and bright

and finish. The work-box, at once a bag and a receptacle or basket for the various articles used by ladies while in the pursuit of occupation, is an example of ingenuity of invention. Still another of plush and wood, satin-lined, bronze ornaments, fittings of eight pieces in imitation of ivory, and containing also a vinaigrette, is a handsome example of the more substantial work-box. The photo album, with its adjustable stand, is specially suited for the handling of heavy volumes of large cabinet portraits and views, and enables them to be displayed if so desired. The binding is in plush, richly decorated with flowers, and a hand-painted scene on ivory inserted into the body of the plush. The leaves are tinted and decorated in various shades and in



PLAQUE AND EASEL.



PHOTOGRAPH ALBUM.

tones which assist rather than detract from the merits of the photographs they are intended to hold.

Lap-pads and pocket writing-cases are specialties in the American market and are steadily increasing in favor with the fair sex for the



ODOR-CASE IN SPUN BRASS.



TOILET-CASE.



PLUSH CLOCK.

and dull background, is also a handsome ornament for the hall. A plaque in brass, with hand-painted centre and having a broad band of interlaced ribbon, is an especially beautiful article for imparting color and brightness to a room; the easel is in one piece of twisted wire of a rope pattern, and makes an appropriate and graceful rest and background for the plaque. A toilet-case of plush and silk and celluloid fittings is an example of compactness and beauty of design

purpose of rapid and convenient correspondence. The latter consists of two parts hinged together, the lower part being deeper than the upper, which serves as the lid. The case is made of any suitable material covered in paper, leather or cloth, and is of the proper size to be placed in the pocket when closed. The lower part is divided into compartments by thin partitions. Ink-bottles are secured in two compartments in the two front corners of the case. A pen-wiper is



fastened in a compartment adjoining one of the ink-bottles. Two compartments are provided for postage-stamps, pens and other small articles. On these a cover fits closely, being hinged on the partition. In other compartments is found a ruler, on one side of which are grooves, in which pen-holders and pencils may be placed. The space left at the end of the partition allows the ruler to be

### Growth of Cotton Goods Manufacture in the South.

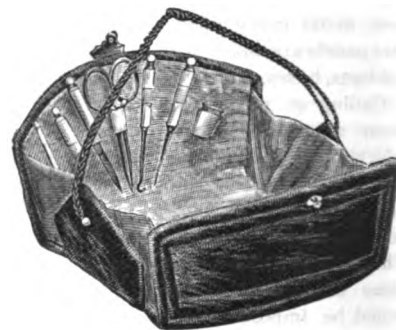
THE *Manufacturers' Record* recently published a compilation of the increase in the manufacture of cotton goods in the several States of the South and the percentage of profit, which will average fully 20 per cent. on the cost. Beginning with South Carolina, it says the Pacolet Company, with 12,000 spindles, is building another mill of



PLAQUE IN BRONZE.



POKER SET.



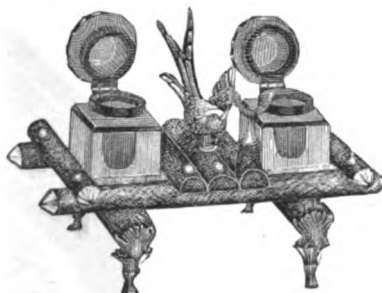
WORK-BOX—RETICULE STYLE.

readily removed from its compartment when wanted for use. The rear compartment may be used to contain a mucilage-bottle or pencil. A rubber band or a pocket is used to hold postal-cards, envelopes, blotting or other papers. The lid is fastened by a pin, which extends through a small hole in the front of the case. These are designed more especially for persons who are traveling and frequently

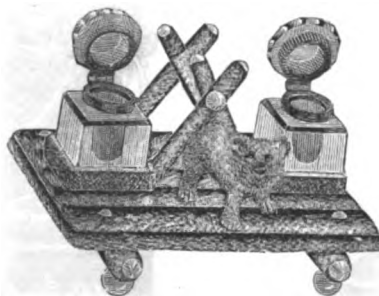
equal size, and the Pelzer Company, with 22,000 spindles, is building another large mill. At Marion a \$100,000 mill is in course of construction, one of \$500,000 at Greenville, one at Clifton of \$300,000, one at Bennettsville of \$200,000, one at Columbia of \$250,000, and one at Fort Mill of \$160,000, while others are projected at Greenwood, Spartanburg, Anderson, Chester, Camden and other points. In North



WORK-BOX AND JEWEL-CASE.



INKSTAND.



INKSTAND.



MANICURE SET.

find it necessary to have a small supply of stationery at hand. As above intimated it has not been the purpose to give details of the varied manufactures which come under the description of novelties and notions. It is only intended to invite attention to the fact that America produces many articles of artistic elegance suitable for every market where grace and refinement claim recognition.

PLUSH panels are the latest designs for use with valentines. One is of plush interwoven with satin of contrasting color, and deeply recessed in the centre is a landscape scene in water-colors, hidden from sight by a hinged door of leather. Another large panel of satin and plush has in its upper and lower diagonal corners hand-painted views, and in the centre designs in water-colors and other ornamentation.

Carolina there are now being built a mill at Lincolnton to cost \$30,000; at Big Falls, \$60,000; at Concord, \$75,000; at Enoree, \$200,000, while others will be built at Davidson College and other points. In Georgia, at Columbus, the Swift Company has added 8,000 spindles to its mill; the Muscogee, of the same place, a new mill of 400 looms; the King Company, 700 looms and 3,000 spindles. At Augusta, Clarksville, Americus, West Point, Dalton and Savannah large improvements are being made and new mills built. In Maryland \$250,000 has been expended by the Laurel Mills, while the mills at Mount Vernon and Elkton are being enlarged. There are also notable improvements in Texas and Tennessee, all looking to an enlargement of the plant, present facilities having been found insufficient to supply the demand.



# Government Intelligence.

## Foreign and Domestic Relations.

PEACE ARBITRATION—THE FISHERY COMMISSION—THE CHINESE CONCESSIONS—CHINESE FAIR DEALING—CONGRESSIONAL LEGISLATION—POSTAL TELEGRAPH—THE TARIFF—ANNUAL REPORTS—FOREIGN MAIL SERVICE—THE TREATY WITH GUATEMALA—AUSTRALIAN WOOL—FRENCH SPOILIATION CLAIMS—CONSULAR APPOINTMENTS—NAVAL INTELLIGENCE.

THE President has received the distinguished gentlemen from Great Britain seeking universal peace through arbitration. They were presented by Andrew Carnegie. It was a body of eminent men and the cause which they plead is one worthy of the highest consideration from rulers and statesmen. Sir Lyon Playfair, M.P., representing the trade unions, clearly explained their object in his short speech. He referred to the fact that individuals were not permitted to settle their disputes by bloodshed and he believed that nations should be so governed. He also said that the time was now favorable for consideration of the question because of the vast preparation that was being made by nations for the destruction of property and the butchery of men. He thought that here, rather than in Europe, the proposal for treaties of arbitration might properly be made, and he hoped that such a treaty might be devised between the United States and Great Britain which might serve as a glorious example to other nations, exhibiting as it would, the two great Anglo-Saxon nations as the peacemakers of the world.

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The President listened attentively and made courteous reply. He told the deputation that the main idea presented was lofty and ennobling and that it was well that the minds of good and thoughtful men should be now turned to this subject. It was well, too, he said, that this effort should be made by the citizens of the two countries which proudly claimed to be in the van of civilization and progress. He further said that the part which the laboring men in England had taken in this question was very touching and persuasive, speaking as they did for their freedom from increased cost of living induced by war and for their homes, their families and their lives. In the administration of government, he said, he was not forgetful of the difficulty which often arises in attempts to apply ideas which in themselves received unqualified approval, but he thought that much might be accomplished by hearty and sincere effort, and he promised faithful and careful consideration of the matter.

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The delegation left the Executive Mansion much pleased with their interview, and evidently regarded the remarks of the President as a very encouraging inaugural of their humane purpose.

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The task of substituting arbitration for gunpowder in the settlement of disputes between nations is a stupendous one, and will hardly be accomplished while millions of men spend the best part of their lives in barracks and camps in companionship with rifles and cannon. Mr. Darwin, who probably knew more of the world and its every condition of life than any man who ever lived, said that war was a necessity in the economy of earthly existence, for it enabled the superior and stronger races to crush out the inferior and thus establish the survival of the fittest. From the dawn of creation down to the broad glare of the nineteenth century this view of the distinguished evolutionist has been fully sustained by the recorded deeds of men and nations. No matter how much we may pray, preach and protest the big fish will go right along eating up the little fish until "time shall be no more."

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Within a few days the Fishery Commission will be assembled at the capital endeavoring to disentangle the snarls and disputes so long debated. The State Department has been officially notified of the appointment of Sir Charles Tupper, of Canada, as one of the British commissioners. This, it is now believed, about completes the list, which now consists of the Hon. Joseph Chamberlain, Sir Lionel West and Sir Charles Tupper on the part of Great Britain, and William L. Putnam and James B. Angell on the part of the United States. The

American commissioners are now at the capital and the British commissioners are expected daily. Thirty-seven rooms have been engaged for the latter at the Arlington Hotel. It is the present intention to have the negotiators meet in the department building, and the large room near the Secretary's office known as the diplomatic reception-room will be set apart for their consultations.

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It is authoritatively stated that at the recent conference between the American commissioners and the Secretary of State the matter of the free admission of Canadian fish was not agreed upon nor was any final, definite position determined with reference to any of the points likely to be considered. Many of the English newspapers have been endeavoring to connect the Canadian fishery troubles with the Behring Sea affairs, when it is well known that the English Government has never questioned the right of the United States to jurisdiction over the waters about Alaska nor has the Department of State ever discussed such right in correspondence with the English Government. On several occasions the British Government has requested information concerning the seizure of English vessels in the Behring Sea, and at no time has the Department of State withheld any facts in its possession touching the subject. The Secretary of State hopes to reach a conclusion of the fishery question by a free and full discussion of the whole subject in all its bearings and has no desire to gain any advantage by a concealment of facts.

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The *Toronto Globe* does not seem to be pleased with either the appointment of Sir Charles Tupper or Mr. Chamberlain. Of the former gentleman it says: "The appointment of Sir Charles Tupper as a representative of Canada at the convention about to be held in Washington is calculated to excite much suspicion wherever he is known, and to create profound uneasiness among all who desire to see the exchange of commodities between Canada and the United States made more free than it is at present. No one who knows him will imagine that he goes to the convention to maintain the right or guard the interests of Canada. People will ask whom and what will he represent at Washington? The monopolists of all kinds, men who desire to extort money which they have no right from the people of Canada by means of an act of Parliament, are now the main props and supports of the Dominion Government. They are opposed to any treaty or arrangement that would break down any part of the system that brings them wealth, and Sir Charles may be regarded as the representative and champion of all these monopolists."

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Speaking of Mr. Chamberlain, the *Globe* is even more vigorous in its language, calling him a hot-headed English politician, nominated in an evil hour, who has been rash enough to take ground against reciprocity and who has borne himself so insolently to a powerful section of the American people that it is almost impossible to believe the United States Senate would dare ratify any agreement in which he bore part. The *Globe* further believes that a discussion of the fishery question alone can only bring trouble, and thinks, under the circumstances, the British Government should, in the interests of international amity, remove Mr. Chamberlain.

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There is nothing new with reference to the Chinese concessions; in fact, the whole affair is getting to be quite a bore. There was recently a letter in the *London Times* which gave an interesting statement of the many schemes that at various times have been heralded as wonderful affairs in the way of breaking down the reserve of the Chinaman and quickly opening up North China to the exploring business men, but alas! they all in time came to naught. The same correspondent proceeded in a very cool style to pick to pieces the concessions of Count Mitkiewicz. He said that the gentlemen who speak so glowingly of the American concessions are living in cloudland. Of the Mitkiewicz concessions he said: 1. He has the exclusive right to introduce and work a particular telephone in the treaty ports of China. 2. The right to establish an American or American-Chinese bank. 3. In return he undertakes to obtain for the Chinese Government as much money as they require in silver at 3 per cent. 4. To lend Li Hung Chang money without interest. As to the scope of the bank and its relations to the Chinese absolutely nothing is fixed,



although there are vague promises of the "when-the-time-comes-we-shall-see" order. He goes on to say the Chinese have no right whatever to either grant or withhold the first. The settlements in the treaty ports are extra-territorialized; the Chinese can prevent no one from setting up any telephone he likes, nor can they authorize anyone to set it up, for they give up their authority over these places by treaty so completely that it is doubtful whether they could carry a telegraph line across one of the settlements themselves without the consent of the consuls or of the municipal authority, if there is one. With reference to the second concession he says that any man or body of men can establish a bank in the treaty ports as he or they could establish any other business. As to the third and fourth privileges, of lending the Chinese money at 3 per cent. and Li Hung Chang a large sum without interest, Count Mitkiewicz is welcome, but as yet, he intimates, the money has not been paid over. In summing up, as it were, he remarks that the count, then, has obtained in regard to his telephone and bank the rights which everyone of us has got, and in regard to the loan he has secured the right to lend the Chinese money on utterly impossible terms.

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In matters of international comity and fair dealing the Chinese have recently taught the Christian nations a lesson which it would be well to emulate. It is well known with what difficulty and acrimonious debate the appropriations were secured to indemnify the Chinese for their brutal treatment during the Wyoming massacre at Rock Springs. It was two years after the murders before the money came into the possession of the Department of State. Since the money has been paid over to the Chinese Minister for distribution to the representatives of the victims he has informed the Secretary of State that it has been discovered that six of the claimants who alleged that they had been injured at the time of the assault are unworthy and their claims fictitious, and therefore he returns by direction of the Chinese Government the amount of money represented by the six rejected claims.

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The recent deal in the telegraph world has brought up the postal telegraph scheme which Senator Edmunds championed so strongly some time ago. It is very likely that at the coming session this important matter will be carefully studied and promptly brought before the two Houses. That it will meet with much opposition is to be expected; that it will succeed is much desired by a majority of the people. The bill favoring a government telegraph, which was introduced last session by Senator Edmunds, reached no vote, which result was largely due to the crowded condition of the calendars and also to the position of the Interstate Commerce bill, which the friends of the postal telegraph did not wish to antagonize. The favorite plan most discussed at present seems to be that the government shall build its own lines and not purchase at enormous figures the plant of private citizens. Since the purchase of the Baltimore and Ohio wires there has certainly been brought about a strong feeling on the part of eminent public men, a desire to place in the hands of the government control of the telegraph system of the United States. Here and there is heard a warning as to the damage that might be done the sacred Constitution by allowing the government to engage in such business; but aside from these there are few voices against the scheme. It is believed that such a system would be particularly beneficial to the telegraph operators who have so long been oppressed by soulless corporations. The greatest fear to them has been that with the postal telegraph might come the uncertainties of political life; but since civil service has been so well established such a fear need not haunt them any longer. Under control of the government it is hardly possible that either the employee or the patron would fare one-half so badly as under the management of a corporation whose sole aim is to make a million dollars first, last and all the time.

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What will become of the tariff at the approaching session no man knoweth, although plenty of gentlemen are found ready to give their prophecies to the reading world freely without price. The eminent Democrats say that the tariff ought to be reduced, "We owe it to the people as their right and we have promised it too long already," while up step the distinguished Republican leaders and talk to the reporter about the great business depression, the financial crash and the great

ruin to the country if protective tariffs are not sustained, and so it goes on from day to day. As the time draws near for Congress to assemble the elements will begin to harmonize, and it is not at all unlikely but that the dominant party will be able to unite on a tariff measure that will be satisfactory to a majority and one which may get through the two Houses. It is certainly shown that the subject is to be vigorously pushed to the front in the Fiftieth Congress with much force and pertinacity by able men.

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This is the month at the capital so prolific of annual reports. The officials of the departments are busy putting in shape the facts and figures that have been collected by their respective clerks touching matters in their own bureau, while the Cabinet officers are assiduously engaged in framing their year's results for the eye of the President and the people. It is not a very easy matter now to get an interview with a member of the Cabinet, for he is likely to be busily at work on his report, knowing that it must be ready by the first week in December to accompany the President's Annual Message to Congress.

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It is not possible to get hold of a page or even a paragraph of the reports of Cabinet officers before Congress meets, unless some enterprising correspondent turns thief when in the midst of great temptation, but of the lesser officials' reports many are available and some are quite interesting. Notably is this true of the returns from the Governors of our Territories showing the material growth and welfare of the country. From the annual report of the Governor of Arizona it is seen that the Territory has increased in population nearly 50,000 since 1880. The aggregate assessed value of property is \$26,313,500, an increase of nearly \$6,000,000 in a year. The Governor says that development is rapid and sure.

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From Montana it is learned that the population has increased 10,000 in the last year, there now being 130,000 people in the Territory, agriculture being their chief employment. Over \$1,000,000 worth of wool was produced during last year. The assessed taxable property is \$60,200,000. Mining is the chief industrial occupation, the total product of gold, silver and lead being about \$26,000,000 for the year. The Governor deprecates the wanton waste of lumber in the Territory, and suggests that the government survey the lands and sell them to citizens under proper regulations, and thus prevent the decrease of valuable forests. The number of miles of railroads built during the year was 626. The Territory has a fine school system with elegant school buildings; thus with good wages the working men and women are prosperous and happy.

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Governor West in his annual report concerning Utah puts the population at 200,000; assessed value of property at \$35,865,000. He says that the development of the Territory is rapid and that manufactories are being extensively erected. Crops are excellent and the cattle interest rapidly improving. The number of cattle is half a million, valued at \$5,000,000. Mineral resources are very great, the output for 1886 being \$7,631,729. Miles of railroad constructed during the past year were 1,146. The Governor says the movement for statehood was inaugurated by the Mormon leaders, and only Mormons took part in it. He asserts that the non-Mormons are not political adventurers, but will compare favorably with any people on earth. He recommends the repeal of the alien land law as to mining lands.

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Even the Governor of far-off Alaska makes an encouraging report. He says that Alaska, in spite of the contrary belief, is a valuable agricultural territory in many sections, and that all of the cereals, except corn, can be grown to perfection. He suggests that Congress shall appoint a commission to settle the boundary line between Alaska and the Northwest Territory, as he fears, through misunderstandings, the Canadian Government will undertake to collect licenses from miners and then trouble will ensue. He further says that the Alaska Commercial Company not only monopolizes the trade which it enjoys from the government, but has driven away all remaining competition and reduced the native population to a state of helpless dependence. "In order to more effectively monopolize trade," says the report, "it has marked and mutilated the coin of the United States, and refuses to receive any other from the natives in payment for



goods sold there." The report recommends that if the present lease cannot be taken away it should not be renewed, as the company is not necessary to the preservation of the fur-seal industry. The report also recommends that Alaska be granted a representative in Congress.

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Dakota probably shows the greatest growth and prosperity of any of the Territories. The population is now 568,477, a gain of 68,477 during the year past, a large proportion of the immigrants being Canadians. The assessed value of property for the past year is placed at \$157,084,365, an increase of 20 per cent. over 1886. Railroad mileage constructed, 717. The Governor of Dakota thinks that the alien land law might be modified so that capitalists might have an opportunity to develop the lands by loaning money in the Territory. This last recommendation is favored by nearly all of the Governors in their annual reports.

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The Auditor of the Treasury for the Post-Office Department, in his annual report, says that the receipts for the department for the fiscal year ended June 30, 1887, were \$48,837,600 and the expenditures \$52,391,677. Excess of expenditures over all revenues, \$3,554,068. The excess of expenditures over all revenues in 1886 was \$6,679,130.

\* \* \* \*

The Postmaster-General has received many memorials from the merchants and importers of New York, Philadelphia, Baltimore, Chicago, St. Louis and other large cities, which, after complimenting him upon his successful efforts to expedite the mails from this country to Europe, express regret that the postal administrations of some European countries do not appear to manifest an equal interest in the prompt and speedy transmission of mails to this country, and the memorialists further request the Postmaster-General to use his good offices with the postal administrations of such countries for the general adoption of the policy of despatching all foreign mails within the territory of the Postal Union by the first and fastest steamers without regard to the flag under which they sail.

\* \* \* \*

For the month of October the public debt statement showed the reduction of the debt to have been \$16,833,695, and that there is now in the Treasury \$11,500,000 more cash than there was a month ago. For the same time there was a net increase in the circulation of \$13,026,659. The total circulation on November 1 was \$1,366,512,349, and the total cash in the Treasury \$609,600,002. The receipts of the government for October amounted to \$31,803,172 and the expenditures to \$12,474,652, being an excess of receipts of \$19,328,520.

\* \* \* \*

The importation of silver ore from Mexico at El Paso, Tex., during October was 5,276 tons, valued at \$265,808, or about an average of 176 tons per day. The ore was of a lower grade than usual. The importations of silver bullion for the same time were \$190,457, silver coin \$729,169, gold bullion \$9,656 and gold coin \$100,522. It is learned at the Treasury Department that figures received from Mexico show that the exportations for the entire fiscal year amount to \$49,191,390, a gain of nearly six million dollars over the preceding fiscal year, coffee alone being sent to the United States to the extent of a million dollars more than the previous year. Tobacco, vanilla and gum also show a marked increase in exportation, exceeding all former figures.

\* \* \* \*

The United States consul at Malta in his report to the State Department says that of the 3,604 mercantile steamers arriving at that island during the past year only one carried the American stars and stripes. He says the importation of American tobacco and petroleum has slightly increased, and he believes that many American articles, such as type-writers, platform scales, clothes wringers, sewing-machines and musical instruments would find ready sale there.

\* \* \* \*

The consul at Beirut, Syria, tells even a more doleful story about the stars and stripes than the consul at Malta, for he says that not since 1880 have his eyes caught a sight of any vessel entering Beirut with the flag of the United States flying at the masthead. He says the flag of the United States as an emblem of commerce is almost wholly unknown in that part of the world. Up to 1880 American sailing vessels bringing petroleum and returning with a various assortment of Oriental goods were sometimes seen, but now this carrying

trade is all possessed by European vessels. The falling off of petroleum trade between the United States and Syria the consul attributes to discrimination against that article of commerce and in favor of Russian petroleum. The Russian oil is inferior, but a determined effort has been made to capture the Syrian market without regard to pecuniary results.

\* \* \* \*

The Spanish Minister has written a letter to the Secretary of State inviting the United States Government to send commissioners to the Barcelona International Exhibition in April. American exhibits are invited also.

\* \* \* \*

The complete ratification of the treaty between the United States and Guatemala has been announced. This treaty was sent to the Senate nearly seventeen years ago by President Grant and then ratified, with amendments. At the last session of Congress the Senate ratified an additional clause in reference to extradition, which reads as follows: "Neither government shall be required to deliver up its own citizens under the stipulations of this convention."

\* \* \* \*

The United States consul at Antwerp, in a late despatch to the Department of State, says that there will be established in that city a permanent exposition, the outcome of the international exposition of 1885, and that American exhibits are invited and applications for space will receive the attention of the United States consul, John H. Stewart.

\* \* \* \*

The United States consular agent at Port Adelaide, Australia, reports to the Department of State that the past year has been one of the most disastrous ever experienced by the colony. Crops were a failure, the wool market depressed and much commercial embarrassment added to the discomforts of all classes. The failure of the Commercial Bank, with a loss of \$1,400,000 to the stockholders, caused much hardship. The most important event during the past year is the discovery of a rich deposit of gold about 230 miles east of Adelaide, where, in two weeks after the find, about 2,000 men had collected.

\* \* \* \*

Some points of interest in the French spoliation claims have just been decided. The Court of Claims holds that the treaties of 1778 with France ceased to exist as an international liability after July 7, 1798, and claims arising after that date must be measured by the principles of international law, without regard to the treaties which were before in force. The court also holds that American privateers captured by France were good prizes of war, but that the mere possession by a merchant vessel engaged in trade of a letter of marque or some armament did not authorize condemnation by the prize tribunals of France. After a full examination of the naval operations in the West Indies between 1792 and 1800, the court concludes that France did not maintain a blockade of the English possessions there, and that American vessels bound to British West Indian ports were not good prizes on the ground that they were bound to a blockade or besieged port.

\* \* \* \*

During the past month the following appointments have been made in the consular and diplomatic service: Alex. R. Webb, of Missouri, consul at Manilla; Victor Vifquain, of Nebraska, consul at Colon, United States of Colombia; E. P. Crane, of New Jersey, consul at Stuttgart, Germany; E. C. Weilep, of Kansas, consul at Sonneberg, Germany; F. D. Hill, of Minnesota, consul at Asuncion, Paraguay.

\* \* \* \*

Rear-Admiral Braine, commander of the South Atlantic squadron, reports to the Navy Department, under date of Rio de Janeiro, October 1, 1887, the following movements of vessels during September: The Tallapoosa left Rio de Janeiro September 10, and at the date of report was probably at Paysandu, having visited Montevideo and Colonna, Uruguay. The Alliance sailed September 17 for Bahia, and left that port for Pernambuco on September 28. The Trenton arrived September 10 at Rio, and after transferring officers, men and stores sailed for New York September 24. The Lancaster was to remain at Rio until the new crew had been drilled at their stations, and would then proceed southward. The health of the officers and men on the Lancaster and Tallapoosa was good, but one of the crew of the Alliance, H. G. Davis, died in hospital.

M.



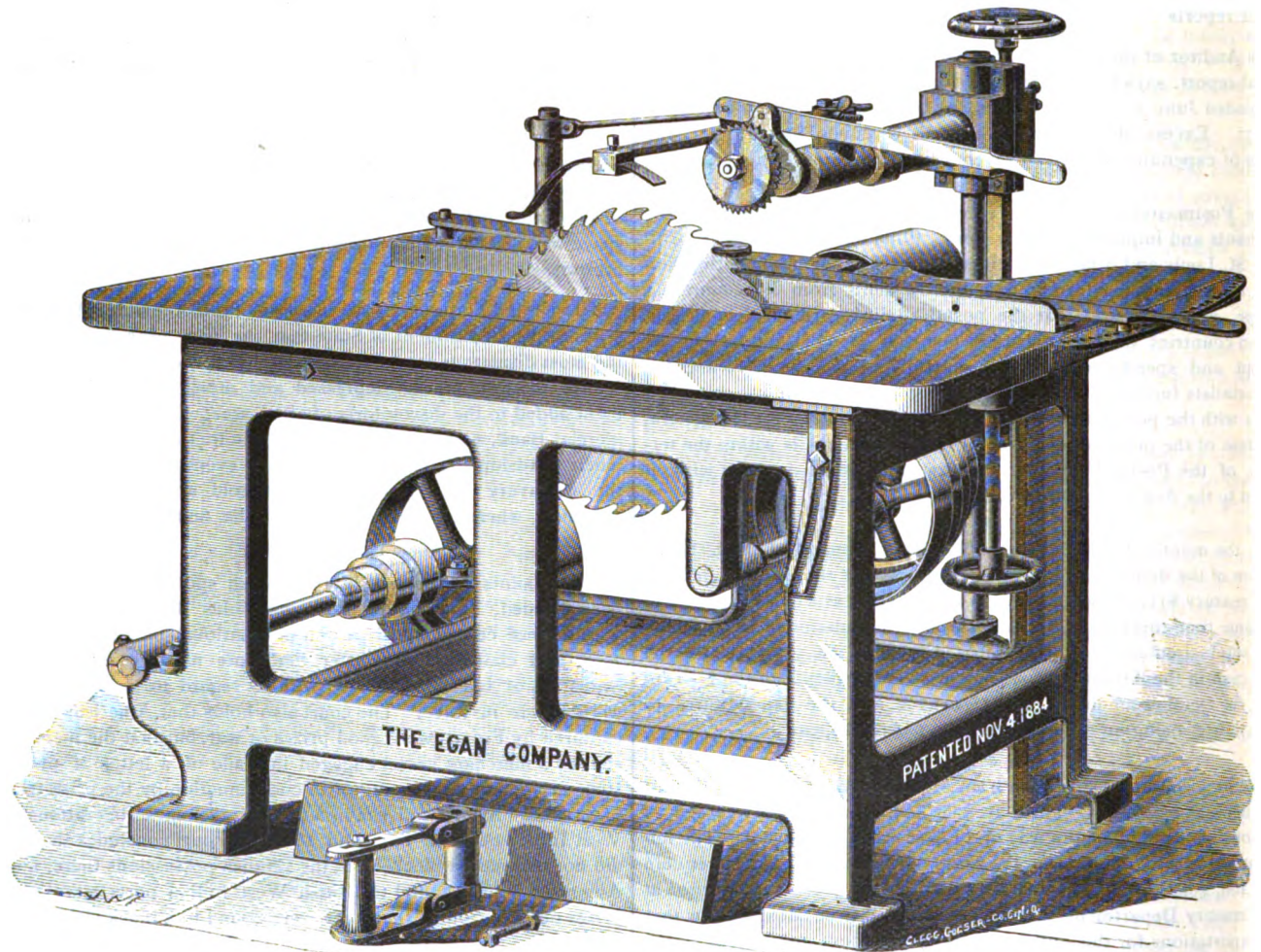
## Engineering and Machinery.

### New Self-Feed Rip-Saw.

**A**N illustration is given of a new self-feed rip-saw, notable for its simplicity and the extreme durability of its construction. This machine has many new points of advantage and convenience, viz.: A very reliable, powerful feed, much simplified and with much less machinery; a method of changing from a self-feed to a hand-feed and edger in one moment by loosening one thumb-screw; a way of getting at the saw without disturbing the feed works by simply swinging the feed-arm out of the way, and a method of feeding a piece so that it is always given a slight lead against the fence, and tracking the feed-saw in such a manner that the cutting-blade always takes out the kerf

which is dropped into an index plate on table, accurately spaced for required widths.

This machine will rip any kind of wood, either hard or soft—taking the place of the common rip-saw for hand use—and the feed is so powerful that it will do the work of from three to six men, and do it cleaner, with no jerks or resting marks on the cut. Planing mills, furniture, chair, bracket and molding factories, and all parties wanting quick ripping of strips, or ripping of any kind, also as a first-class resaw, will find it a great labor-saver. The resawing attachment is shown in the cut; it is attached to the regular fence and movable with it, and can be beveled to any angle, so as to split straight or bevel siding; and with a 22-inch taper saw, which is used for resawing, it will resaw straight or bevel stuff seven and three-quarter inches wide. There is no danger of the operator getting his fingers



NEW SELF-FEED RIP-SAW.

made by the feeder. The feeding saw is geared up, and can be lifted instantly out of the feed kerf, so as to stop the feed and pull out the lumber, if necessary. The frame is cast cored style and is very strong and well braced, and stands very substantially on the floor. The feed is very powerful, and consists of four speeds—60, 80, 100 and 120 feet per minute—and it can be quickly changed from one to the other. The table is of walnut and cherry, with a thick plate surrounding the saw, and is hinged at the back end, and (when the feed-arm is swung back) can be raised up by the screw or clamp, or can be lifted clear up, giving free access to the mandrel. The cast-steel mandrel is extra heavy and is of best crucible steel, running in self-oiling boxes. The pulley or mandrel is eight inches diameter and eight and a half inches face, and should run 2,000 to 2,500 revolutions per minute, according to size of saw used when ripping. The mandrel is fitted with substantial outside bearing which allows of very heavy work being done with the greatest ease and without strain on the machine, as the driving-belt runs between boxes. The patent fence is adjustable from the working end of the machine, so that the operator can change instantly for different widths by lifting the lever, which is provided with a pin,

cut and no danger of the board flying back, as the boards are held firmly on each side of the cutting saw by a spring. Several saws can be used on the mandrel, if necessary, for sawing blind slats or work of that class. Further information and prices of this or any other wood-working machinery can be had by addressing the Egan Company.

### Book Perfecting and Printing Machine.

**A** NEW book perfecting and printing machine is capable of turning out 5,000 bound books in the course of an hour. There are three great iron cylinders, each having a diameter of six feet. On one of these are the forms which do the printing in quadruple series, the other two acting solely as impression cylinders. In combination with the cylinder carrying the printing forms are ink fountains, form and distributing rollers, while in combination with the impression cylinders are novel appliances for handling (automatically), revising, assembling, folding, covering and delivering the complete books. The end of a huge roll of paper is started into the machine; the monster cylinders revolve and in a little while books, printed, bound and finished, are delivered rapidly at the end of the machine.



### Dustless Separator.

**A**n illustration is given of a dustless separator for grain and flax, manufactured by the E. H. Pease Manufacturing Company. In this machine the dust, chaff, &c., are taken out of the grain as the latter falls from the hopper down onto the hurdle or sieves and is conveyed by the spout out of doors or into a bin. The suction is regulated by valves, so that more or less chaff, light seeds, &c., may be taken out as desired. After the grain is relieved of the dust it passes through the separator proper, which is built upon exactly the same principle as the "end shake" mill. It can be used if desired without suction, by simply throwing off the belt of the suction-fan, and can then be used by single horse-power. The "capacity" of the separator depends upon the quantity of oats and foul stuff in the grain, and upon the closeness of the separation desired. The capacity is based upon wheat.

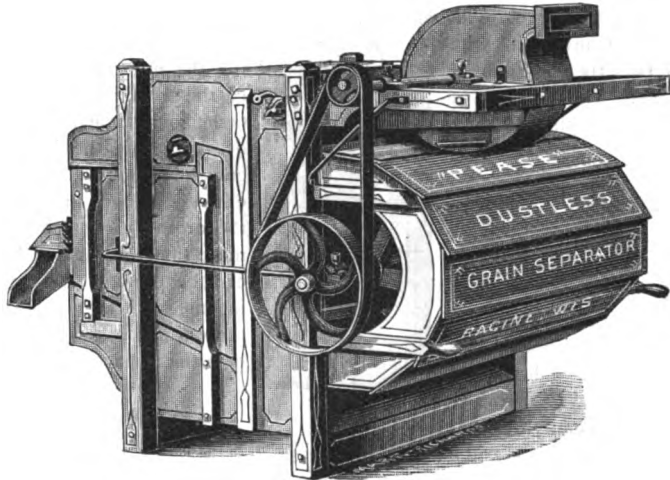
In this separator there is no gearing to wear and pound. It has no wearing parts whatever except the two shafts and eccentrics, so that with the exception of the slightest humming of the suction-fan it is noiseless. Any one competent to run an ordinary fanning-mill can operate this machine. A strong current of air is drawn through the grain as it falls from the hopper down onto the sieves of the separator. This suction current through the grain operates upon every individual kernel. The height of this separator from the floor to the top of the receiving hopper is four feet three inches.

### Separador Sin Polvo.

**I**LUSTRAMOS en esta página un separador de granos sin polvo fabricado por la compañía fabril, the E. H. Pease Manufacturing Company. Es máquina que funciona sin engranaje expuesto á gastarse

efectivamente es máquina absolutamente sin rival para separar la avena del trigo y de la cebada y asimismo para limpiar y tamizar toda clase de granos. Ese separador está especialmente adaptado para limpiar linaza, puesto que aspira el polvo cascabillo y trigo sarraceno sin sacar un solo grano bien formado de linaza. La capacidad del separador depende de la cantidad de avena y cascabillo con que el grano se halle mezclado y además del grado de limpieza que se desee lograr.

La capacidad tiene el trigo por base. El separador está provisto del aparato de tamizar llamado "Commercial."



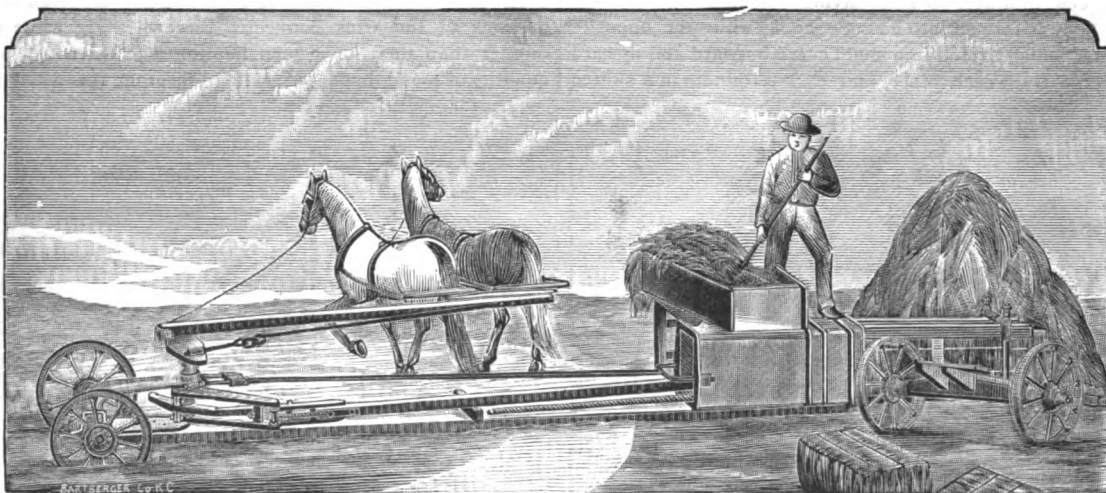
DUSTLESS SEPARATOR.

### "Lightning" Hay Press.

**M**ACHINERY for compressing hay, cotton, wool, hair or other products which are most conveniently handled when brought into small compass, has been one of the features of American invention. Baling-presses are not new, but some forms of construction embody features which are novel and are great improvements upon old designs. The baling-press, herewith illustrated, is made by the Kansas City Hay Press Company, and while known as a hay press is equally available for use with different kinds of material.

The baling-chamber in this press is entirely of steel, having a tensile strength of 60,000 pounds, the angles being riveted. The press weighs only 2,200 pounds, involving a very light draught; the tying chamber is made of steel angles, compactly arranged; the power is increased by a double toggle pointed lever, by which the leverage and power steadily increases until at the close of the plunger movement the power is enormous. The cut shows the press in operation; it has a full circle sweep, and no turning or reversing of the team is necessary.

The following is one of many testimonials to the value of this press: "Oakland, Ia., Jan. 1, 1887. Kansas City Hay Press Co., Kansas



"LIGHTNING" HAY PRESS.

y cualquier operario familiarizado con un aventador ordinario puede actuarla.

El principio de la aspiración es el que se ha adoptado para su construcción, quiere decir que una fuerte corriente de aire atraviesa el grano al caer éste de la tolva en las cribas del separador, de manera que no hay necesidad de que el abanico neumático excede de la mitad del tamaño de los de otros separadores, con lo que se economiza bastante fuerza motriz.

No mide más de 4 pies 3 pulgadas de alto desde el piso hasta la tolva, lo que es muy cómodo para los diferentes tamaños de espita;

City, Mo.: I am better pleased with press every day. I can, with three men, press 140 bales in 8 hours, bales averaging from 100 to 110 lbs. Have baled, when we wanted to, a bale in 2½ min., and I will, for my part, put my Kansas City Lightning Hay Press in the field with any hay press made, for ease, speed or tightness of bale. Have put 12 to 14 tons in a 34 ft. grain car. I have worn out one of the best presses made, and would not give my little Kansas City Press for a dozen. In fact, would not bother with them again. Trusting you will meet with the success due you, I am yours respectfully, J. F. HUNTINGTON. P. S.—I will back every word by actual work. It is a 'daisy.'"



## Hardware.

### "Champion" Mail Box.

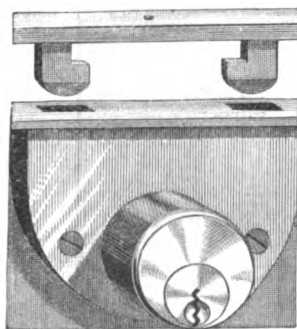
THE mail box illustrated on this page has been designed to supply a want for a letter receptacle designed for use at private houses, and which, while safe and durable, is neat and unobjectionable in appearance. This box has a steel spring paper-holder at the back of the cornice on top for papers and magazines and improved letter drop, a place for the number of the house and another for the name, which serves as a door-plate. The box is twelve inches long, six inches wide and is made of the best material, with bronzed or dark front with raised letters. Its contents are secured by means of a spring padlock. The box can be ordered in quantities, for use in any country, a slight change in the lettering only being needed.

### "Yale" Cash or Bond Box.

THERE has just been put on the market the "Yale" cash or bond box. Illustrations of the box, its lock and key are shown on this page. The box is made of the heaviest and best tin plate, the top, bottom, sides and corners being banded with the same material, the body of the box being japanned maroon and the bands and handles a rich gold bronze. The lock is made specially for the box, and no two locks are made alike unless specially ordered. Two keys are furnished with each box. The handle on top is sunk and the side handles are furnished with stops, preventing them from being raised more than half way. Ten different sizes of boxes of design are made, although any size will be made to order. One size, 40 Y, is made with lock and hinges on the end. This new box is strongly and substantially made, and is especially adapted for securely keeping bonds and other valuable papers.

### Combined Safety Hook and Hanger.

A NEW combined hook and hanger for use in suspending and detaching articles from hooks and pins upon walls and ceilings will be found a simple and useful implement for use by merchants, housekeepers and others. The body of the device terminates at its bottom portion in a screw-thread, by which it may be removably secured at the end of a pole or staff having a socket to receive it. One side of the body is formed into a single hook, while the opposite side has two arms, which extend in a slight curve outward and upward and slightly diverge from each other, and each terminate in a slotted



"YALE" CASH OR BOND BOX.

end, into which the cord, bail or handle of the article to be hung up is received. The object of the single hook is to detach the article from the peg, the sharp point entering the spring and quickly removing it from the pin, after which the loop of the string slips down and over the hook, by which its accidental displacement by being lowered is prevented. By reason of the top end of the hook inclining forward this end is prevented from entering the wall and injuring it while in the act of detaching an article from its pin. It will be understood that the hook and hanger is so formed that it will enable the person to stand off somewhat and see the article unhooked or replaced, which, it is claimed, can be done by no other invention for the purpose. The wide range of adaptability of this improvement will at once be apparent. It can be used, for instance, in hanging and taking down wearing

apparel, dry goods, tin and hollow ware, pictures, toys, bird cages, flower baskets, hardware, patterns in cloak or clothing manufactures.

### Improvement in Scrubbing-Brushes.

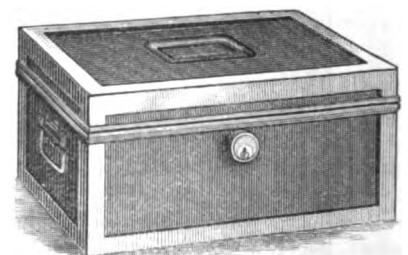
A NEW combination for scrubbing-brushes consists of a frame to which an ordinary scrubbing-brush is clamped, and which is provided with a perforated pipe connected with a pump or hydrant, so that in the operation of scrubbing a number of water jets are projected against the surface that is being scrubbed, just ahead of the brush. The handle of the brush is hollow, and the hose is connected at the end. This construction can be modified, however, and the hose connected to the perforated pipe directly, without changing the nature of the device. The hose is connected by any of the usual styles of coupling, so that it can be readily attached or detached. A valve is also provided, so that the flow of water from the jet-pipe can be regulated to suit the circumstances of use. By this means the flow of water can be entirely stopped and the brush used the same as those having the ordinary construction. This improvement is of much more than ordinary value, since the operation of scrubbing can be done in one-half the time required by the ordinary means, and the action of the jets make the work more thorough than can be accomplished by merely pouring water over the surface to be cleaned, as is usually done.

### Concave-Head Wire Finishing-Nails.

WIRE nails and brads which have a countersink in the head to hold the point of a set punch and prevent it from slipping off in the operation of driving have just been put on the market. These nails are specially adapted for hardwood finish, and also for putting up gilt and other moldings in rooms, preventing as they do the marring of the wood and enabling the workmen to set the nails rapidly. They are made in all sizes of the best steel wire and at the same price as the common finishing wire nails.

### Improved Picks and Mattocks.

A NEW line of picks and mattocks has an improvement in the form of two or more bearings for holding the handle in the tool, whereby its liability to break or work loose is lessened. In these goods the eye, corresponding to the eye of the regular line, and the portions of the arms connected therewith, are made narrower and thinner than they have been heretofore constructed, and about the quantity of metal dispensed with in forming the usual head and eye



portion of the arms is extended from the arms to form a brace. These braces extend upward, and are united to form a second or supplementary eye somewhat smaller in diameter than the eye in which the end of the handle is held. The tool is about the same weight as the regular article, and it has the increased strength which comes from the braces.

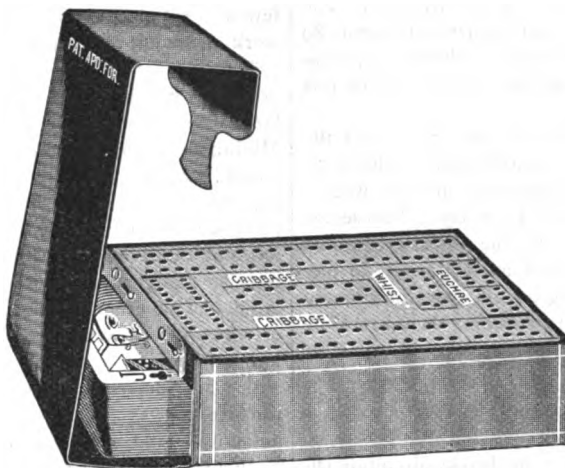
The point is made that while the regular pickaxes and such tools with only a single eye in the head, giving a bearing of only the thickness of the head, need to have the head thick and heavy, with a liability even then of the handle to work loose or become weakened by wearing near the point of the eye, those described, without any increase of weight, have much more strength and durability. A full line of these goods will be put on the market.



## Fancy Goods, Stationery & Paper

### The "B. G." Combination Card-Case and Cribbage-Board.

THE latest novelty in the game-counter line is the "B. G." combination card-case and cribbage-board, the general design of which is shown in an illustration on this page. This is a patented article, the claim being for a cribbage-board upon the wall of a card-case. Besides its use as a cribbage-board it is designed as a counter for most any game played with cards. These cases are finished in cloth and leather, the tops being of wood and polished. In one end of the top, or cribbage-board, are receptacles in which are kept the counting-pins when not in use, they being kept secured by a small brass clip which slides along the end. On the inner side of the flap is an erasable tablet, for such use as occasion may require in the way of memoranda. The article is very compact, neat and attractive; convenient for home use as a receptacle for playing-cards and handy for the traveler, since it can be carried in the pocket.



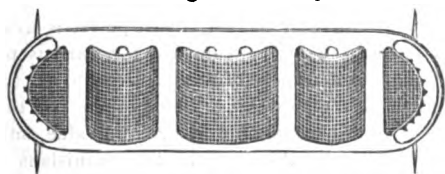
"B. G." COMBINATION CASE AND BOARD.

### Combination Writing-Case.

AN illustration of a unique writing-case, which is especially adapted for the traveling public, and which is of interest to everyone who makes use of writing implements, is given on this page. This case, as may be seen, is novel, and it is claimed that it is the only combination of the kind in the market. As it is made in four different sizes it will suit almost any requirement. It is handsomely finished in the best quality of velvet plush, and will thus be appreciated by those who may wish to make a sensible as well as beautiful present.

### Pencil-Holder.

CUT on this page illustrates a new pocket pencil-holder, which consists of a metal plate, having at the back pins which are thrust through the cloth of the waistcoat and are clinched on the back. The metal plate has several perforations, through which an elastic band, tipped with metal, passes. The loops formed by the band are to hold pencils, stylographic or fountain pens, pocket scissors, &c. The loops are adjustable, so as to retain large or small pencils, as desired. The



NEW PENCIL-HOLDER.

holder is placed in and just below the top of the waistcoat pocket, so that it is completely out of sight.

### Progressive Tennis.

FEW games have taken such a hold on the general public as lawn tennis, and the game of cards based on the same idea and embodying the same principles promises to be equally popular. It can be played by two, or any multiple of two, couples, one pair of partners opposing another pair, the same as in out-door tennis.

The material required for each "count" or table of four players consists of the following: Two packs of special playing-cards and two packs of what are called "chance cards." The two packs of playing-cards are just like those used for euchre, whist, &c., except that each one has printed on its face, in addition to the ordinary spots of hearts, spades, diamonds or clubs, a certain play or stroke which occurs in the game of tennis with racket and ball. Thus all of the

five spots represent an "under-hand stroke," all of the aces an "over-hand stroke," &c.

The two packs of "chance cards" used at each table consist of nine cards each; six of them read "I return it," two of them "Fault" and one reads "I fail to return it." These "chance cards" are used only by the "receivers," who are opponents to the "servers," just as is the case in out-door tennis, and these determine the result of the first play made by the server. Each pair of partners require a pack of the playing-cards, which, after being shuffled, are divided equally between them, one card at a time. After the cards are thus dealt each player discards from his hand one card of each suit, and the contestants are then ready for the play. The "server" says to the "receiver" (his opponent) "I serve you a spade" (or any other suit he chooses). The "receiver" turns the top card of the pack of "chance cards" and decides the "serve." If the card turned reads, "I fail to return it," it counts a point for the "server." If it reads "Fault" it counts a point for the "receiver," but if it reads "I return it," the "receiver" plays down any card he chooses in spades, or in whatever suit was "served" by the opponent, and as he does so he reads off the name of the play printed on the card which he plays. Thus, if he plays a five-spot he (the "receiver") says, "I return it with an 'under-hand stroke.'" Either of the service partners returns the play by matching the five-spot of spades, if they have not discarded it, and returns the imaginary ball by playing some other card in the same suit. One side or the other must sooner or later

fail to return a play, because of the fact that it has discarded the card corresponding to the one played by his opponent. It then counts a point for the other side. Thus the play goes on. Each suit is played only once in each deal, and when all of the four suits have been played a new deal is had; the discards are replaced in the pack and other cards discarded in their place, and so on. The counts are identical with those of tennis, and the game advances and is subject to the same general rules as govern the out-door game. To explain the game in detail would be too lengthy; but it may suffice to say that, while it



COMBINATION WRITING-CASE.

contains all of the elements of an amusing and entertaining game, it is extremely simple in construction, and anyone who has ever handled a racket or who can tell one card from another will find no difficulty in fully comprehending its principles from the start.

### Preservative Paper.

THIS is a paper prepared by passing it through a solution of borax, sal soda, alkali, oxide of iron, oxide of tin and gluten. While moist it is passed through calendering rolls, which close the fibres and give it a finely finished or calendered surface. The calendering also closes the pores of the paper, so as to render it more impervious to gases. This paper is said to be adapted for preserving metals from tarnishing; for preserving all kinds of meat, fruit, eggs, vegetables, &c.; for carpet lining for protection against vermin and for hanging in the rooms of dwellings as a disinfectant. The paper is also used in the manufacture of boxes, caskets and cases.



## Metals and Mining.

### Salt and Ores.

THE question of the price of salt is a very important one to the miners at Butte, Mon., as it is at similar camps. Immense quantities of salt are used in the reduction of the ores. The Alice Mill at that place alone consumes some 30,000 tons of salt every year. The railroad has been charging \$12 a ton freight on the salt it brought there, and finally some of the companies said they must quit work on their mines if the rate was maintained. The railroad company paid no attention to the demand, and the Alice and Magna Charta mines closed down, throwing some 400 men out of work.

The owners of the mines pledged themselves to resume work if the freight rate should be reduced to \$7.50 per ton from Salt Lake. The railroad has at last made a concession and put the freight rate at \$9 per ton, though the miners wanted it for \$1.50 less. Still it is probable that the Alice Mine, at least, will begin work again in view of this reduction.

The statement is made, however, that with the present grade of the ore in some of these mines expenses must be still further reduced to admit of a profit. There is some talk of reducing miners' wages. Underground men get \$3.50 and surface men \$3 per day. This seems little enough for a camp where the expenses of living are as great as at Butte. If the company want good miners they must continue to pay good wages. There is mining enough going on all over the country in these days to furnish work for all the skilled miners there are to be found, and if they cannot get good wages at one place they can at another.—*Mining Press.*

### Ore Deposits.

S. F. EMMONS, the geologist in charge of the Rocky Mountain Division of the Geological Survey, recently read a paper before the Colorado Scientific Society, which was of unusual interest. It was devoted to a discussion of the method in which veins were found and filled with ore, and was a continuation of a paper read by him one year ago. It was an account of his conclusions based upon long observation of vein phenomena, and is in entire accord with the growing belief of chemical geologists. The paper discussed the method of vein or fissure formations which were caused by the great movements of the earth's crust or by the local contraction of the rocks (and both of these causes have in different cases been in operation), and the method in which the ore was deposited. It discredited the commonly accepted idea of a vein as a fissure with well-defined walls at considerable distances apart which were filled after the formation of the fissure. He cited the ordinary granite quarries in which cracks or joints are always found extending regularly to great lengths and depths as illustrations of the original fissures which have been changed by the chemical action of percolating waters into veins and deposits of ore. In all crystalline, as well as the sedimentary rocks, these cracks can be found running parallel to each other at various distances apart, often plentiful and close together. In cases where percolating waters were charged with the proper metals and metalloids, and the necessary chemical and physical conditions existed, the rocks lying between those cracks were altered into ore. Feldspar may have been replaced by magnesia, and almost any conceivable change of the kind may have taken place. As one element was dissolved another must necessarily have taken its place.

In the light of modern research and chemical knowledge, says the *Denver Tribune-Republican*, Mr. Emmons' theory appears not only reasonable, but almost, if not quite, the only one which cannot account for all observed phenomena. Accepting it as true, it has a decidedly practical and valuable bearing for the miner. If correct, it is not by any means certain that what is commonly accepted as a wall of a vein is such, and cross-cutting to determine the lateral boundaries of the ore deposit becomes in all cases desirable. Every miner of experience can remember innumerable instances in which what he is pleased to call a "slip" has been followed as one well-defined wall, until some accident broke through it, when he found good ore, perhaps in abundance, on the other side. The existence of such a "slip" is difficult to account for upon any theory of vein-filling except that advanced by Mr. Emmons. It also follows, too, that if veins were

formed in that way, the occasional apparent loss of one or both walls is not only to be expected, but is unavoidable.

Richard Pearce heartily indorsed Mr. Emmons' paper, and said that its conclusions were entirely in accord with his own. He pointed to pseudomorphs as evidences of such substitution as was suggested, and stated that he had many years ago found in a Cornwall mine a pseudomorph of tin after feldspar. Other evidences were cited, while value of the paper was fully appreciated.

### River Mining in California.

THE fact is well known to our readers, says the *Union Democrat*, that a tunnel has been run under the peninsula formed by the Stanislaus River, near Reynolds' Ferry, and a considerable portion of the river-bed thereby drained for mining operations; but probably few who have not been upon the ground realize the magnitude of the work or the enormous possibilities awaiting its projectors.

The river, at the scene of operations, in its sinuous course forms a peninsula which may be described by comparison with an elongated horseshoe. Under the base of this peninsula the Stanislaus River Mining and Tunnel Company has constructed a tunnel 1,300 feet in length, which now diverts the entire flow of the river, and which is capable of carrying a body of water sevenfold greater. The company owns some 300 acres of placer ground, including about four miles of the river-bed. Enormously rich deposits of gold are known to exist along that portion of the river owned by the company, the crude and superficial operations of the past having led to discoveries of which the early miners were powerless to avail themselves. The long and narrow peninsula under which the tunnel runs is itself rich with placer deposits. Over a considerable portion of it the river once ran, leaving, as its course was changed, a bar from which a large amount of gold has been taken by the rudest and most superficial methods, and which is as yet comparatively untouched.

There is also upon this peninsula a considerable bank of ground prospecting richly, and which is admirably situated for hydraulic operations, with sufficient space for impounding all débris. Upon the westerly side of the river, opposite the apex of the peninsula, a slide has covered up a section of the river-bed, and the buried channel here prospects big. The lower portion of the company's ground consists of the famous "Bostwick Bar," of several acres in extent, extremely rich in placer deposits. The river in this locality is so crooked, with so many riffles, pot-holes, bars and buried channels, that it would probably be impossible to find anywhere any locality comprising within the same compass such magnificent opportunities.

At the head of the tunnel, where the water enters from the river, wheels have been constructed, and water will be pumped to reservoirs upon a hill above, whence with a fall of from 125 to 300 feet the company will have free water for hydraulic and other mining operations upon all portions of its grounds. The tunnel having at its point of commencement a fall of 20 or 25 feet, a vast power is available which will ultimately be utilized by the company for various purposes. It must be gratifying to the owners of this property to see the successful accomplishment of an undertaking which opens to their disposal placer deposits of certainly magnificent size and value, and which will probably yield fortunes by the scores. The Stanislaus River Company's undertaking is similar to the Big Bend tunnel enterprise on the Feather River, excepting that the latter had much less rich ground in sight, and constructed its tunnel some two feet above the bed of the river at its place of commencement, rendering an extensive dam necessary; whereas by skillful engineering the tunnel of the Stanislaus Company has all the requisite fall at its point of contact with the river.

The rich developments at Moffitt's, on the Tuolumne River, at the head of Red Mountain Bar, a deposit similar to that of the Stanislaus Company, is attracting much attention to river mining.

GOLD and silver are reported as having been discovered near the Chippewa River, Minn. The latest reports from the assayer return \$40 to the ton in gold and about \$20 to the ton in silver, the specimens being taken from different veins. For some time past a corporation known as the Wabash Mining Company has been quietly buying up and leasing all the land obtainable in the vicinity of the locality named, and it has succeeded in getting possession of several thousand acres.



# The American Mail & Export Journal.

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OUR correspondent at Warsaw specifies certain lines of American production which he thinks will readily find purchasers in Russia. American manufacturers are invited to take note of these suggestions and govern themselves accordingly.

IT is also noteworthy that the Russian farmers demand tools of American manufacture, and that they are imposed upon by counterfeits, which are not and cannot be of the same grade, either as to finish or quality, as our patterns which they simulate. This demand should be met. The goods can be sold, and where buyers are ready manufacturers should be alert to meet them.

IT is also of importance that shipping directions shall be carefully observed. In our domestic trade we all know what annoyance is caused by carelessness in this regard. How much more must this annoyance be felt when goods are sent a long distance to other countries and to points remote from the convenience of the consignee. It may be that a laudable desire to expedite shipments and satisfy the wants of the purchaser may lead to error; but this does not compensate for the time and trouble experienced by the consignee. Shippers should inform themselves fully as to the proper routes and follow shipping directions closely.

COTTON manufacture in our Southern States continues to develop with certainty and rapidity. It may not be many years before the cotton mills of America located in close proximity to the sources of supply of raw material will be influential in shaping the cotton-goods trade of the world. Capital is constantly flowing in to increase the industrial resources of a section where manufacturing enterprises once despised and considered impracticable are destined to have a powerful influence upon commerce and its policies.

MUCH complaint is made as to the careless transmission of mail matter from other countries. While we do not set up our own Post-Office Department as being distinctively the most efficient in its general management, there is undoubtedly well-founded reason for the complaint referred to. If the Post-Office authorities of other countries were as alert as our own to secure expeditious postal service where foreign mails are concerned there would be no cause for fault-finding. The efficiency of this branch of our postal administration is chiefly due to the New York office and its competent head.

AN interesting chapter of history is to be found in the details of "A Diplomatic Episode," which appears in the current issue of a well-known magazine. This narrative relates to the treaty for the purchase and sale of the Danish West India Islands to the United States, and presents succinctly facts which we do not remember to have seen so publicly exhibited for the consideration of the American people. Assuming that the statements as to the course of the negotiations and the subsequent suspension of action in the United States Senate are correct, there can be but one opinion as to the manner in which Denmark was treated. It was a discourtesy against which we are sure the people of this country would protest had they the opportunity to express their views individually. While it might not have seemed desirable, and may

not have been advisable, to close with Denmark upon the treaty referred to, it was a national obligation that our dissent should have been early and properly communicated.

THE latest American Minister to Liberia has returned and resigned his position, expressing disgust with the country. He expresses an opinion adverse to encouraging emigration thither, and he is probably right in his views. There is no doubt that the colored people of America, emigrating to the land from which they derived their ancestry, are more likely to yield to the influence of their surroundings than to accomplish missionary work in civilizing the savage tribes of Africa and turning a densely ignorant race into an enlightened people. The colored people of America are much better off where they are.

LEGISLATION on the tariff will be one of the issues of contention at the coming session of Congress; but that it will make material progress or amount to more than enough to obstruct business which needs more active attention is very doubtful. The new members may not be so chary of committing themselves in opposition to a very significant reminder from the people at the last Congressional election, but the free-traders, whose legislative experience covers many years, and who have escaped the fate which overtook so many of their quondam associates, may proceed with more caution.

A NOVEL suggestion for the determination of the fishery question with Canada has been presented by Edward Atkinson. That gentleman proposes that the United States shall buy the Dominion maritime provinces, paying therefor the sum of \$50,000,000, which would also be in settlement of the share of the public debt of Canada, apportioned per capita among the people of the provinces surrendered. Mr. Atkinson favors the project of commercial union, from which, indeed, we believe Canada would derive decisive advantage, but his project for putting an end to the fisheries conference will not be likely to be as acceptable. The United States can afford to wait, and, by waiting, save money. Unless the seat of British empire shall be transferred to America, not only the maritime provinces of Canada, but the whole Dominion as well, will gravitate toward the United States. The fishery question will in time disappear from view, but for the present it will serve to accelerate the day when Canadian autonomy will accommodate itself to the restrictions of our Constitution. Mr. Atkinson's proposition is bold, but it is unnecessary.

SOME of the foreign journals affect to despise the Chinese concessions and say that they are worthless. A correspondent of the London *Times* reviews these privileges, and on the basis as stated by him they certainly do not amount to much, if they are worth anything at all. But at the same time we fail to see why there should be so much waste of energy and language on something which is absolutely valueless. We know that the concessions brought by Mitkiewicz and transferred by him to the Philadelphia capitalists have created no end of confusion in the minds of the would-be concessionaires of other countries, and have even caused intrigue and diplomatic interference to be set on foot to disturb or annul them. So much excitement over nothing would be singular. Indifference certainly ought not to suggest dispatches from the British Minister to his home government or set the representatives of other powers actively to work in the effort to counteract the influence which Americans have apparently secured. There has been some triumphant prediction that these concessions will be withdrawn. It is doubtful if this is done by authority, as the parties most immediately interested have not been notified to that effect. The fuss which has been made about this matter is amusing, and it will be still more amusing if it shall prove to



have been all for nothing. But then, as we have suggested, there must be something in the affair that such a disturbance should have been caused by it.

IN his review of the trade of Japan Minister Hubbard briefly refers to the fact that, although by far the greater proportion of the export trade of the empire is conducted with the United States, there is no reciprocity, or, in other words, that the Japanese do not buy from us. He also states that Americans are shut out from government contracts, but that favor is given to the English, German and French, to the exclusion of Americans who stand ready to fill such contracts on better terms than the parties to whom they are conceded. It would appear from this that the Japanese officials, and people as well, are prejudiced against American goods and American houses. It is difficult to conceive a reason for this prejudice, but it may be in some misapprehension caused by the false statements of our competitors or in what the Japanese consider indifference on our part to trading with them. The manufacturers of the United States certainly have not pressed their goods upon the markets of Japan with as much assiduity as their European competitors and push and persistence will tell in commercial rivalries. But there is a suggestion of other adverse influences in Mr. Hubbard's report, and if there is opposition, founded on other causes than that which has been suggested, he should speak out plainly and let his fellow-countrymen know from what it arises. Japanese tea is not a necessity, neither is Japanese silk nor any of the numerous articles which come to us from Japan. Should the American people get into this mode of thinking, they would act upon it, potentially perhaps in regard to the trade of Japan.

#### DEVELOPMENTS IN SOUTH AFRICA.

EVENTS of great importance have been occurring since the middle of October in a portion of South Africa. The Netherland South African Railroad Company has, under the guaranty of the Transvaal Government, successfully floated in Europe a 6,000,000 guilder loan, and Transvaal, the South African republic, will soon have its railroad from Delagoa Bay to Pretoria, skirting the famous "Kaaop" gold-fields, where \$5,000,000 worth of gold quartz-crushing machinery of English and American make is being erected, and thousands of stamps will soon be reducing the ore. The gain in population has been 20,000 since the gold discoveries were made. From being pecuniarily the most needy the South African republic is now becoming the richest community in that part of the Black Continent. The Boers of Transvaal feel so buoyant that in October they negotiated a union between the republic and the so-called new republic, a piece of Zululand wrenched by Boer freebooters from the latter. Now negotiations have been set on foot to induce the Orange Free State, also a Boer republic, to join the two united republics. Should this combination be brought about the Boers will become quite a powerful little nation. The people of Natal are also making a move in the direction of Zululand, and on October 27 it was cabled from London that the Zulus were rising against annexation to Natal; that Sir Arthur Havelock, Governor of Natal, with 1,500 troops drafted from the colony, had started for the territory formerly possessed by Cetewayo, where the latter's son, Dinizulu, leads the rising. The fact is that Zululand, stretching along the southeastern coast, with its Santa Lucia Bay, has become a country too important to be forever left in possession of a savage people. If Natal does not make haste to conquer it the united republics surely will, sooner or later. Should Zululand be annexed it would double Natal in size.

Natal was discovered on December 25, 1497, by Vasco da Gama, and received its name because it was on Christmas Day that the famous navigator took possession of it on behalf of the crown of

Portugal. It is now a British colony, and comprises an area of 13,500,000 acres. In 1881 the population was 378,562; in 1885 it had increased to 443,639. Natal has a large transit trade with Zululand, the Orange Free State and the South African republic. The harbor of Durban, which has a somewhat dangerous bar, has been much improved by the works of the harbor board. The main industry of the colony is, however, agriculture. It has a great future as a sugar-producing country, and even now 60,000 tons of sugar are made. Indian corn is the next important staple. There are also several coal mines. In 1876 the imports amounted to £1,022,890, in 1885 to £1,518,557, and the exports rose from £657,390 in 1876 to £877,483 in 1885. The total tonnage of vessels entered in 1885 was 195,260; tons cleared, 193,143. The revenue was only £265,551 in 1876, in 1885 it was £669,831, and the expenditure £261,933 and £871,675 respectively. Railway receipts in 1885 were £175,425, and on public works in the same year the sum of £97,516 was spent. The public debt on December 21, 1885, was £3,762,860. There are 223 miles of railway and 442 miles of government telegraph.

Natal is a colony of the first class in point of vitality and progress, and with the remaining portions of the Cape Colony is in a most flourishing condition. Since the advance in wool and the steady returns from the diamond fields the Cape Colony has attracted more capital and trade. American domestic exports thither rose from \$1,230,550 during the fiscal year ended June, 1886, to \$1,460,256 during the fiscal year ended June, 1887, while the imports thence were \$1,352,568 and \$1,232,940 respectively. Our trade prospects in that direction are most promising.

#### AFFAIRS IN SANTO DOMINGO.

CONSIDERABLE attention has been directed of late toward Santo Domingo, not only because of the improvements which are being carried out in that country, but by reason of an important change recently made in its constitution, which provides that the President shall hereafter hold office for four years instead of two. In view of this change, which is not without significance, a few facts regarding the present condition of the republic, its progress and its prospects may not be out of place.

At the head of the existing government is Ulysses Heureaux, a man of rare executive ability and to whom the country undoubtedly owes much of its present prosperity. He entered upon his second term as President about a year ago, and is the first to be affected by the new amendment to the constitution. He is ably assisted by Mr. Gautier, the Secretary of State. The President has shown himself fully in favor of the enterprises of foreigners and has encouraged those which he thought likely to lead to the advancement and progress of his country. In consequence of this policy a number of foreign corporations, notably English and American, have been engaged in carrying out improvements which, when completed, will greatly increase the facilities of the country and tend to the advantage of the people.

A railroad is now under construction by an English corporation headed by Alexander Baird, and this is rapidly progressing toward completion. It is Santo Domingo's first railroad, and in a comparatively short time it will be an easy journey from Santiago, the largest city in the interior, to Samana, a city of importance on the eastern coast. This will be of great value to the territory which it traverses, as it has been necessary heretofore to transport merchandise by means of pack-horses. On August 13 the government conceded to Mr. Baird the right to carry the road to Santiago and allotted him for a term of thirty-five years 7 per cent. of all the import duties received at the port of Sanchez, the immediate seaport terminus of the road. Another railroad has been proposed by an American company, represented by Ogden P. Pell, Henry C. Hutson and Cornelius V. Sidell, to whom the concession has



already been made by the government. This road is to be known as the Santo Domingo Shore Line Railroad, and the line of track will extend along the southern coast. It will be begun at Santo Domingo city and will pass through San Cristobal, Azua and other coast towns. As most of the sugar plantations are located in that immediate vicinity the sugargrowing industry of the country will be greatly advanced.

Another American enterprise which will be of great benefit to the republic was the reclamation of a large tract of land which had been sparsely populated and was little more than a vast morass. This has been brought about in several ways, but chiefly by opening the River Jaqui to navigation. The Jaqui, the largest stream in the island, had become choked with accumulations of debris and driftwood, which filled the entire channel for many miles, and the waters overflowed what were once large and fertile plains of natural pasture and dense forests of valuable dye and cabinet woods. This tract of perhaps 200 square miles of territory has been reclaimed by the construction of an artificial channel some eighteen miles in length, built by Palmer Smith, an American engineer, and his associates.

There have also been several other important improvements made, prominent among them being the erection of a telegraph system which now extends over the whole of the northern portion of the republic. The city of Santo Domingo is in possession of a most complete and improved telephonic system, and the telephone has been put up and successfully used, not only in many other towns upon the island, but also upon the private sugar plantations of many of the planters. Other improvements, which it is thought will shortly be carried out, are also projected. Among these may be mentioned the connection of Santo Domingo with the outside world by means of a cable, and lighting of the streets of the capital by electricity.

These signs of enterprise are encouraging. The works contemplated and in progress can only be carried out under an intelligent and public-spirited administration, and the people of Santo Domingo are to be congratulated upon having secured a government so liberal and advantageous so important.

#### OUR SHIPPING INTERESTS AND SUBSIDIES.

THE MAIL has more than once avowed its belief in the propriety as well as necessity of laws to provide means for encouraging direct trade with foreign countries. The spirit of legislation and the dominating influences in our national administration appear to be adverse, if not absolutely hostile, to all propositions of this character. Indeed it has seemed, at times, as if foreign interests held sway in disposing of measures hostile to them and likely to disturb their relations with markets which they have considered peculiarly their own. We have heretofore adverted to the fact that railway extension under government subsidy has helped to build up our waste places, to extend our domestic commerce and manufactures and to promote our home markets. We have reasoned that, analogously, like subvention will build up our foreign trade, encourage steamship lines and secure direct and close communication with markets difficult to reach. This does not seem to us a strained idea, particularly when we cast our eyes on Mexico and see what international railway communication has effected. The ocean pathway must be traversed by ships and the right of way is as open to us as to others, but we must make and maintain our own roads by sea as by land or pay toll to others.

If the examples which other countries set but do not strive to impress upon us may be considered against those policies which such countries urge for our benefit (?), we may invite attention to what European states have been doing in the way of subsidizing their merchant marine. Great Britain has paid in forty years a quarter of a billion of dollars in subsidies of this kind,

and is now paying annually \$9,000,000 for the purpose of supporting lines which enable her to keep her position in the commercial world. The Canadian Pacific Railway has opened another avenue of communication for her with Eastern countries, and the connecting link formed by the recently established steamship line from Vancouver, on the Pacific Coast, to Yokohama, Japan, is supported by a subvention of \$200,000. The influence of this line has been already felt, for it has withdrawn from our own transcontinental railways a large share of trade, and we are now paying tribute to the enterprise of commercial rivals, when we ought to be exacting it from them. France and Germany have been giving bounties to their merchant vessels and encouraging the construction of steamships and the development of new lines. Italy pays a construction bounty and subsidizes every steamship plying between her ports and non-European countries. Spain spends money liberally in the same manner, and even the republics of South America are beginning to realize the advantages of making like donations.

What are the United States doing; what has our government done to meet this enterprise? Nothing; every effort to give support to American steamship lines has been vigorously opposed, and the Postmaster-General, arrogating to himself powers higher than those of the law-making authority, has refused to pay American steamships for carrying the South American mails, the appropriation voted for this purpose by Congress having been handed over to British steamers, while American ships have been passed by.

The advocates of foreign ideas do not note this, nor do they care to. It is not in the line of their policy. Anything anti-American is more likely to secure their support, while suggestions of national benefit meet with their most vehement and loud-voiced opposition. It is the old tory spirit which contended against and refused to support the independence of the thirteen colonies.

We have a new Congress, which will meet in December. It is differently constituted from the last, and will be called upon to act in a wiser and more liberal spirit than has yet prevailed. A tonnage bill will be presented. The text of this bill is as follows:

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled:*

That on and after the passage of this Act there shall be paid out of the moneys in the Treasury of the United States, not otherwise appropriated, to any vessel, whether *sail or steam*, built and owned wholly in the United States, engaged in the foreign trade, the sum of thirty cents per registered ton for each one thousand miles sailed, and *pro rata* for any distance traveled less than one thousand miles, on any voyage or voyages between this and any foreign country or countries; and the measure of distance traveled, and the distance between ports or places in this country and ports or places in foreign countries, and between one foreign port or place and another foreign port or place, and from any designated point of longitude and latitude to any port or place in this country or any foreign country, shall be determined by measurements which shall be furnished by the United States Hydrographic Office to the Bureau of Navigation, and such payments to any vessel as aforesaid shall be paid on the vessel's arrival at a port of entry in the United States, in accordance with such regulations as the Secretary of the Treasury shall prepare and promulgate.

The payment at the rate of thirty cents per ton for each one thousand miles sailed as herein provided to be paid to vessels engaged in the foreign trade shall continue for the term of ten years, and thereafter for another term of nine years at a reduction of three cents per ton each year upon each one thousand miles sailed, and *pro rata* for any less distance traveled.

The foregoing bill does not come up to the full measure of our needs; it is moderate and within the limits set by other countries. It ought to be passed, and the people of the United States whose prejudices and ideas are not unalterably wedded to the principle that the carrying trade of the world can best be conducted by other countries, and that we must reach the world's markets by such routes as our rivals may provide, should unite in giving support to the bill. Our foreign commerce will be one of the issues upon which political events will hinge, and the legislator or public official who acts counter to its interests must be set aside in obscurity.



## Communications.

### Russia.

[FROM OUR OWN CORRESPONDENT.]

WARSAW, October 10, 1887.

IN my August letter I informed the readers of your valuable journal of an exhibition for textile fabrics which is to be opened in Warsaw. Owing to some unforeseen reason the opening will not take place before December, so that American manufacturers may still send their goods for this exhibition. It will also be interesting for you to hear that the bulk of the goods exhibited will remain in the rooms of the Warsaw Museum for Trade and Industries, and the committee of this institution will both encourage our merchants to inspect the foreign samples and at the same time will act as a middleman between the manufacturer and consumer. Thus this city will have the first special perpetual exhibition of samples in Russia. This may be the best means of enlivening the American export trade to Russia, which has become of late very slack.

Some leading merchants whom I interviewed the other day on this subject told me that, except in cotton, very little direct trade is going on between Russia and America, for your manufacturers generally prefer to appoint a general agent for the whole European continent, who does all the business for them. Sometimes they tried to buy direct, but as a rule their hope of making a more profitable bargain did not realize; for, contrary to the German and partly the English, your manufacturers do not grant any credit, but expect ready cash beforehand, and in many instances will not send their fabrics to be paid for on arrival at a European seaport. Sometimes when the goods have been paid for in advance they forward them, contrary to the directions of the buyer, to any seaport which suits them best. The rates of freight from Hamburg to Russia are the cheapest, for there is a direct goods train running twice a week from this important centre of the world's commerce to Russia, and goods shipped to any other port may lie for a long time before they are sent away. In this manner our merchants not only lose the interest on their capital, but also have to pay a higher rate than otherwise. If your manufacturers were to appoint special agents for Russia, they could certainly realize larger profits than hitherto.

I shall try to give you a list of the articles that may be imported to these parts and which may have a good chance to find a ready sale: First, I may mention all kinds of American patent machinery, like sewing-machines; all kinds of agricultural implements and blades for hoes and spades. American hay-forks are so much appreciated by our peasantry that they will buy none except that bearing an American trade-mark, and the inferior article produced here very often bears the imitation of a well-known American article. Harvesting machinery is also in demand. The "Tiger" machines have been a complete success in Russia, lots of them being sold in the course of a year. Cutlery and machine tools also offer a promising field, since in this specialty Russia is quite dependent upon other countries. All kinds of wood-working machinery will be bought readily, and all kinds of American specialties, like wringing-machines, &c.

Such products will, of course, have to pay a rather high freight and also a duty on passing the Russian frontier; their price must therefore be such as to be able to compete with the German and English products. The following named articles do not have to pay a duty: Fertilizers, rosin, naval stores, canned goods not boiled in sugar (salmon, bananas, peaches, &c.) A very great business could be done in seeds. Owing to the great heat in spring and the wet and cold weather of this summer many acres of clover are entirely spoiled; therefore Russia, which in former years exported immense quantities of seeds, will be obliged to buy much from abroad. The old-established firm of B. Werner & Co., Warsaw, grain and seed merchants, will be glad to hear of any American firm willing to export seeds to Russia.

I have been requested by another firm to inquire whether your carpet makers do not want our Russian wool or camel's hair, which articles are exported from here to Germany, France and England.

The New York Life Insurance Company some time ago entered into

negotiations with the Russian Government in order to start a branch office in Russia. Our government asked for a security of 500,000 rubles, but this proposed condition the company could not accept; consequently the company's agents, who had a good many policies in hand, had to cease their operations entirely. The Russian companies, which enjoyed a monopoly of the business, strained their energy and most likely spent large sums in order to prevent any encroachment on their field of operations. It may be considered characteristic of our government to shut out the New York company in order to protect home companies, which, on the one hand, offer much security to the public, but, on the other, make exorbitantly high charges.

L.

### The Perfected Phonograph.

THOMAS A. EDISON, the well-known American inventor, is at present at work upon a machine for which he makes the most extraordinary claims, and which, according to his account, will effect a greater revolution than the telephone did a few years ago. Scientific men are inclined to doubt that his forthcoming invention will do one-half of what he promises for it, but as Edison has already established himself as a leader among the scientific men of the day by his invention of the electric light, his ideas, although yet in embryo, ought by no means to be received with ridicule. In the year 1877 Edison invented a machine which he called the phonograph, and which was exhibited all over the country and in Europe, and was conceded to be one of the wonders of the century. The working of this instrument is very generally understood. By speaking, or rather shouting, in at the mouth-piece a record was made by a little steel point upon a sheet of tin-foil, and then by turning a crank the sheet could be made to pass again through an instrument which would reproduce the original sounds. The phonograph in this state was little more than a toy; its reproduction of conversation was often something of a caricature of the original, and no one save an expert could get anything intelligible back from it. The machine created considerable amusement, but could not be put to any practical use. Since that time Edison has been giving his attention to other inventions, and nothing has been done toward perfecting the phonograph until the present year.

Eight months ago he again began work upon it, with the object of producing a commercial machine which would be as widely used as the telephone. He now announces that he has succeeded and has produced a perfected phonograph in which there is no further improvement to be made and which is all that he ever hoped to attain. The original phonograph cost a great deal to make, and in addition to its other defective qualities was bulky, awkward and weighed about 100 pounds. The new and finished machine, however, will occupy as little space on a merchant's desk or at the side of his desk as the typewriter now does. It will work automatically by a small electric motor, which runs at a perfectly regular rate of speed, is noiseless and stops or starts at the touch of a spring. Suppose that the merchant wishes to write a letter; he pulls the mouthpiece of the phonograph toward him, starts the motor with a touch and says what he has to say in an ordinary tone of voice. When he is done he pulls out a little sheet and rolls it up for the mail. The recipient places this sheet in a similar phonograph, touches the motor spring and the instrument will at once read out the letter in a tone clearer, more distinct and more characteristic of the voice than any telephone has ever yet succeeded in doing.

As yet Edison will not give the details for his seemingly wonderful invention for publication, nor will he permit an outsider to examine its working, but says that he expects to have it in the market by January. He has thus far made two of the perfected phonographs himself, and as the second was equal to the first he has set out to manufacture the article in quantities, and forty workmen are at present employed in making the tools for the first lot, which is to consist of 500 phonographs. The phonograph voice, Edison says, is not a loud voice; perhaps not more than twice as loud as the sound which comes from a good telephone and thus an earphone will be necessary. Of course, there can be no disturbances in the phonographic message, such as are caused by induction along a telephone wire, and as the apparatus can be made to repeat every syllable over and over again an endless number of times there is no danger of any misunderstanding.



## U. S. Ministers and Consuls.

### Exports from Syria.

CONSUL BISSINGER.

THE volume of the export trade from this country was, as is usually the case, considerably smaller than that of the imports. Wheat, sesame and other cereals were only exported in limited quantities. The unsettled condition of the silk market in Lyons for the first seven months depressed the price of Syrian raw silk, which fell to the unprecedentedly low figure of \$9 per kilogram (2 1-5 pounds), but toward the end of February a slight improvement made itself manifest, and prices gradually rose to \$10.62. This advance, however, was not sustained for more than three months, and the price has again receded and is now about \$10.23 *loco* Marseilles. (All quotations refer to Marseilles, that city being the recognized centre of the Syrian raw-silk trade.)

The low price prevailing in both America and Europe for most of Syria's staples has greatly impeded her export trade. Egypt, the principal outlet for Syrian products, appears to have lost much of its former commercial activity since its political policy has been obliged to undergo a change. The exports to that country have consequently been quite limited. Even the Syrian tobacco, which used to find such a ready sale there and command good prices, seems to be gradually replaced by other markets, notably those of European Turkey. A slight falling off is observable in the wool exports, the total of which was \$300,500 in 1885-6, against \$412,250 for 1884-5; but there is every reason to believe that exports to the United States will greatly increase during the year. Besides unwashed wool, licorice root to the amount of \$133,831.13 was shipped to the United States, a large increase over previous years. Iron ore, soap and Oriental sundries did not vary materially from former years. Small quantities of scammony root, to the aggregate value of \$613.17, have also been exported to the United States. Scammony is a species of the genus *convolvulus* (*C. scammonia*), is a perennial, and grows wild in various parts of the Levant. The best, however, comes from Aleppo, and when pure contains about 82 per cent. of rosin, the active ingredient of a most excellent and trustworthy cathartic. Few drugs are so uniformly adulterated as scammony, and the fact that it grows wild and in abundance, and can be obtained in its pure state in Aleppo, deserves to be better understood by our people in the United States.

### Exports from India to the United States.

CONSUL-GENERAL BONHAM.

THE exports from British India to the United States consist principally of jute and gunny bags, hides and skins, indigo lac, salt-petre and linseed.

Although India produces a superior quality of tea and a fair article of coffee, yet for some reason neither has been much exported to the United States.

The balance of trade between the two countries is largely in favor of India. Since I have been in Calcutta I have devoted a good deal of attention to the inquiry, which I believe is considered a part of consular duty, as to how this condition of commercial affairs may be corrected. The commerce of a country, I understand, as a rule, is not considered to be in a very healthy or satisfactory condition when its imports largely exceed its exports. I find the fact to be that while nature's laboratory keeps lavishly pouring oil into the receptacles provided for it (as in the past), we can undersell nearly all the world in oil. But, on the other hand, I notice that when our people at home undertake to produce a manufactured commodity, the value of which depends largely upon the amount of skill and labor bestowed upon its production, they do not seem to be able as yet to furnish the same to the remote markets of the world at as low a figure as it can be procured from elsewhere.

Europe, with her steamships plying through the direct route of the Suez Canal, supplemented by her cheap labor, can furnish India with goods and wares of nearly every description, especially textile fabrics, on more favorable terms than they can be procured from the United States.

And this condition of things I have no doubt will continue to exist so long as the policy of protection of home manufactures prevails with

us, instead of the other doctrine of a freer competition and the "survival of the fittest," which seems to obtain to a great extent in most of the manufacturing countries of Europe, as well as in India. But, in view of the fact that the absorbing question of the tariff in the United States does not seem to have become crystalized or materialized into any very definite form, I do not feel disposed to elaborate on the subject in a consular report, but content myself with a brief statement of the facts so far as they seem to me to have a bearing upon the condition of the commercial relations between the United States and British India.

Upon the several subjects of the condition of the mines, fisheries and forests in India, I have little to submit of special public interest. Coal mines are worked extensively and to advantage, but the precious metals have not been found in largely paying quantities.

The productions of fisheries are unimportant except for local consumption. There are plenty of both fresh and salt water fish in the waters of India of fair quality, and they are used quite extensively as an article of food both by Europeans and natives. The forests of India are carefully preserved by the government, and its teak is a valuable hardwood somewhat resembling our American black walnut and is extensively used for building purposes as well as in the manufacture of furniture.

The fragrant sandal-wood grows here and is extensively used in the manufacture of ornamental boxes and cabinet ware.

The bamboo grows in great profusion and the natives use it in many ways and considerable quantities of it are shipped to the United States and elsewhere.

### Mexican Tobacco.

CONSUL MACKEV.

THE tobacco of Mexico is of such excellent quality that it is said by many to equal that of Cuba, and there is no doubt among those acquainted with Mexican tobacco that such a comparison is admissible.

The best cigars of Vera Cruz and Tabasco are not excelled by the best of Havana in form and flavor. Perhaps, however, the superiority of the leaf from the celebrated "Vuelta Abajo" is most apparent in that exquisite aroma which the tobacco of no other country possesses, and which, to the senses of the smoker, is the most delightful and ravishing of perfumes. On the other hand, the Mexican cigars burn much more freely than those of Cuba, which must be constantly in the mouth of the smoker or they become extinguished.

The manufacture of tobacco in Mexico into cigars and cigarettes of a fine quality is of comparatively recent origin, dating from the Cuban insurrection of 1868, when a number of refugees from that island landed at Vera Cruz and there established factories for the manufacture of cigars and cigarettes of the tobacco of the country. Since that time factories have been established in all parts of the republic where tobacco is produced, and the tobacco industry now furnishes employment for many laborers and skilled workmen.

Vera Cruz in 1866 contained four important factories for the manufacture of tobacco, "La Union," "La Especial," "La Prueba" and "La Nacional," besides various establishments on a smaller scale. These four factories employ among them more than a thousand workmen.

In San Andres Tuxtla there are ten factories of the first order, three in Jalapa, and many in Orizaba, Puebla, San Luis Potosi, the city of Mexico and elsewhere. The factories produce cigars of all qualities, ranging in price from \$20 to \$200 per thousand. Cigars are manufactured of every size and every shade, and great ingenuity and taste are displayed in devices of shape and ornament to attract the eye of the smoker.

In the cultivation of tobacco increased care and intelligence bestowed on each succeeding crop are augmenting greatly the production and improving the quality of the leaf, while better methods of packing, selection and distribution in classes are observed in its preparation for market.

A disregard for these last particulars has diminished the acceptability of Mexican tobacco abroad, as much tobacco was formerly exported from Vera Cruz in the condition in which it would arrive from different places of the interior, the good and bad packed together indiscriminately without regard to quality. This was especially the case with



commercial houses making shipments of tobacco for the purpose of placing funds in Europe to greater advantage, and to avoid the heavy loss by exchange. The houses of Vera Cruz which are regular exporters of tobacco now use all due care in its selection and preparation for exportation, with the result of increased estimation for the tobacco of Mexico in the markets of London, Hamburg and New York. Much Mexican tobacco shipped to these places is manufactured and sold as that of Havana.

The Valle National, situated between the states of Vera Cruz and Oaxaca, produces tobacco of the finest quality and is entirely devoted to that purpose. The tobacco of San Andres Tuxtla, Acacuyan, Jathpam and other portions of the same region is of excellent quality. Tlapacoyam produces large quantities of tobacco of a class inferior to that grown on the Gulf Coast, though the wrappers of Tlapacoyam are much esteemed for their smoothness and fineness of texture. The cigars of Tabasco are highly appreciated by smokers. Tobacco of an inferior quality is raised in Orizaba, Chiapas, Cordova and Oaxaca.

The price of tobacco in the leaf for wrappers and filling varies in different localities, ranging for filling from \$4 to \$15 and for wrappers from \$10 to \$30 the arroba of twenty-five pounds.

### Developing American Trade with China.

MINISTER DENBY.

IT has long since been demonstrated that one of the chief impediments in the way of opening new branches of trade in the East was the ignorance in which our producers and manufacturers were of the needs and tastes of these remote countries, where foreign trade is centred in a few localities and in the hands of a very limited number of merchants, whose operations are very frequently confined to a certain category of goods. Of course there are exceptions, and some foreign firms do a general import and export business, but I do not believe that their number is sufficiently great or their operations so extensive as to invalidate my remarks.

It cannot, furthermore, be expected that in a country like China commercial travelers will ever be able to do much in the way of finding new markets for their goods, which are frequently not adapted to the requirements of the people or are made in patterns which do not suit their taste.

We already manufacture a number of articles especially for the China market, but the list of such goods might certainly be increased if our manufacturers were better acquainted with the wants of the market and could manufacture articles or patterns already adopted by the Chinese, and if they were in possession of such information as would enable them to regulate their prices so as to be able to compete with the native producers. I will only mention the article of hardware. Chinese hardware, though cheap, is of a very inferior quality, and it seems impossible that our manufacturers, if they knew the tastes of the Chinese, could not produce articles far superior in quality and at such low prices that they could easily compete with the native goods in the Chinese markets.

It is also an undoubted fact that among the natural products of such a vast country as China there must be many which would be useful and salable in America were their uses better known.

The importance of bringing the products and manufactures of remote countries under the eyes of home manufacturers and merchants has, for many years, been appreciated by some of the European powers which have commercial interests in the East, and they have made efforts to remedy this want.

At least twenty-five or thirty years ago the French Government found that the establishment at Paris of a permanent exposition of the products and manufactures of its remote colonies was highly advantageous to the development of trade.

More recently many of the consular officers of Germany have been collecting specimens of produce and manufactures of their districts, and also of the foreign manufactures for sale in the native markets, and forwarding them to different localities in the German Empire, there to be exposed to the public. Accompanying these samples the consuls have sent such detailed descriptions as might enable interested parties to ascertain if they could possibly compete advantageously with the native manufacturers on their own markets. Different chambers of commerce have defrayed the expenses of purchasing and forwarding these goods—expenses which I learn have never been

considerable—and have provided room for their exhibition. The German Government has not been called upon to make any allowances or incur any expenses in accomplishing this result.

A short time ago Belgium adopted an analogous plan and has opened in one of its chief manufacturing centres an exposition of the produce and manufactures of the far East.

Last year the French syndicate, which has its headquarters at Tien-Tsin, opened at that place an exposition of French manufactures for the information of the Chinese, and I hear their plan has already borne fruit.

Some plan analogous to that followed by Germany might prove beneficial to the development of our trade with China. Our consular officers in China would, for their part, be well pleased to do their share of the work, and give this further proof of their earnest desire to develop trade between China and the United States.

### Trade of Japan in 1886.

MINISTER HUBBARD.

THE total value of Japan's export trade for the year was 48,870,471 yen, and the total value of her import trade for the same period was 32,168,432 yen, being a total of import and export trade for the year of 81,038,903 yen, which is an increase of 16,601,510 yen over the total trade of 1885. The excess of export over import trade for the year under consideration was 16,702,039 yen. While the aggregate value of imports from the United States into Japan increased in 1886 over 1885, 632,802 yen, the gain on kerosene alone was 690,776 over 1885, the falling off being in such imports as leather, clocks, watches, &c., and several other articles. The total imports from the United States for 1885 were 2,726,184, while for 1886 the imports have increased to 3,083,601. These figures speak for themselves, indicating the fact that while the balance of trade against the United States has not been decreased, American exports to Japan have increased in 1886 over 1885 more than half a million in value, to wit, 632,802. The demand, per contra, in America for Japanese productions has increased largely over 1885, the Japanese exports to America in 1885 being more than 15,000,000 while for 1886 it has swelled to over 19,000,000. We buy of Japan more than Great Britain does by 15,792,861; than France by 10,355,314; and than Germany by 19,123,758. The United States should and can sell more largely to Japan than now of the varied products of our soil, wheat, flour, &c., and the manufactures of our mills and the fabric of our looms. The absolute cost of production and manufacture, the vast advantage in the distance of transportation by sea, should enable our people to place their goods in the Eastern markets at as low prices (certainly for the same grade of goods) as French, English or German manufacturers. Your commercial statistics of the trade relations between China and the United States shows the gratifying fact that American "piece goods" and cotton and woolen fabrics have found a ready and annually increasing demand in China. Why not in Japan, with her 38,000,000 of consumers, as well? I have had the honor to direct your attention to the fact heretofore that so far as concerns materials for railway construction, and bridges, and locomotives, &c. (and even our iron and steel rails can enter into competition with English and German rails if our people will only submit to smaller profits, as the latter do in their shipments hither), we can successfully compete with our European rivals.

We have read much and heard more about "favorites" at court at this capital, so far as awarding of government contracts for public works is concerned. Such intimations have boldly entered in the contentions of English merchants with their government and are alluded to in official papers of the British diplomatic authorities in Japan. No such charges have been made by the United States diplomatic representative at this court, and yet while I have asked earnestly for my countrymen the sheer privilege in common justice and equity to openly compete for such government contracts (such as railways and other public works upon which Japan is now entering largely), and while I have been told that an equal showing would be given to Americans, it has not been done, and the largest and most profitable contracts of the government proper have been awarded to German, English and French people. This in the face of the fact that I had for our American iron men and railway constructors and civil en-



gineers assured this government that they could and would not only duplicate all such contracts, but at a considerable per centum less than others had bid for them.

Nevertheless, the people of Japan trade with us by many millions more than any other nation.

We consume nearly all her tea, and over one-third of all her silk, on which no duty is paid at our ports.

These facts and figures show that of the entire export and import trade of Japan with all the nations of the earth, the United States represents actually one-fourth of that aggregate.

"Other things being equal," therefore, on the score of equal inducements as to prices and qualities, we may unfortunately have cause hereafter to complain that reciprocity in trade, even when the conditions are the same, is ignored, while giving fresh assurances, on paper of our long-continued and cordial friendly relations.

### The Sugar Industry of Germany.

CONSUL MILLAR.

AS respects methods of cultivation and manufacture, the sugar industry of Germany is superior to that of any other nation; and if other German industries are able, under less favorable conditions, to compete successfully with other countries, the sugar industry may reasonably be called on to do the same. An examination of statistics leads to the same conclusion. The European production of sugar last year was as follows:

Germany.....cwt.	20,300,000	Belgium.....cwt.	1,900,000
Austria.....	10,500,000	Holland.....	1,000,000
France.....	10,000,000		
Russia.....	9,400,000	Total.....	53,000,000

The export from Germany in the last five years is estimated to have been as follows:

1882-3.....cwt.	9,400,000	1885-6.....cwt.	10,000,000
1883-4.....	11,900,000	1886-7.....	13,000,000
1884-5.....	13,500,000		

These figures show that German sugar plays a leading part in the markets of the world, and that foreign countries are largely dependent on Germany for their supplies. The only competition to be feared is that of France, and even here it is to be remarked that a long time will elapse before France is in a position to raise its production from 10,000,000 to 20,000,000 cwt., and when it has done so the increased consumption in the world will probably leave France in the same position as now. There is, consequently, no reason to fear that sugar factories will work with no profit if the export bounties are withdrawn.

Two classes of bounties have to be distinguished in Germany, the bounty on raw sugar and the special export bounty on refined sugar. The manufacturer of raw sugar is generally a farmer also and cultivates large areas of ground. He pays 85 pfennigs (20½ cents) tax per cwt. of beets and receives 9 marks (\$2.14½) returned on the export of each cwt. of raw sugar, so that he presumably uses about 10½ cwt. of beets to produce one cwt. of sugar. In point of fact he only uses 8½, so that he gets about 2 marks surplus bounty on each cwt. of manufactured sugar. The refiners are a smaller and, for the state, less important class than the farmer manufacturers of raw sugar, but they receive greater benefits. The tax paid by the refiners on raw sugar (that is, the difference between the home and export prices) is, as above, 9 marks per cwt. Ten cwt. of raw sugar produce nine of refined, so that the export bounty should not exceed 10 marks. In fact, it amounts to 11.10 marks (\$2.64), so that the state loses 1.10 mark (26 cents) on every cwt. of refined sugar exported. This inequality is not removed by the new proposals for the reduction of the bounties, inasmuch as the tax on raw sugar is reduced to 8.63 marks, and the export bounty on refined sugar to 10.75 marks. Strictly, the export bounty should be reduced to 9.58 marks, so that the new proposal would produce a loss to the state of 1.17 mark per cwt. In other words, the state will collect some 20,000,000 marks from the farming manufacturers of raw sugar, to return the bulk into the pocket of the few refiners, while only a million or two will come into the treasury. This form of the proposal is no doubt due to the great political influence of the refiners; but the article concludes with the belief that the Imperial Government and the Reichstag will nevertheless view the matter more in the light of the general welfare and protect the interests of the many against those of the few.

### Flour in Colombia.

CONSUL VIVQUAIN.

FORTY dollars and more per barrel is the price of flour here along the coast, a great portion of which is customs duties. As a result, the imports of flour from the United States are not what they might be, the laboring classes being unable to use such an expensive article.

I estimate, from figures collected, that where one barrel of flour for consumption, say five bushels of wheat, is imported now, eight barrels, or forty bushels of wheat in the grain, would be imported and consumed if it were manufactured here and sold at "reasonable" rates, *i. e.*, from \$5 to \$7 for 100 pounds weight. That is to say, if 100,000 barrels are imported from the States for the Colombian market, outside of the Isthmus of Panama, the equivalent of 500,000 bushels of wheat, eight times this amount in wheat, or 4,000,000 of bushels of wheat, would be imported.

To be sure, this is not much in proportion to what our crop generally is in the States; but then it would always be that much, with promise of a large increase in the near future; it might become an immense factor in establishing on this continent a substitute for the market for wheat that we have lost in Europe, and facilitate perhaps not a little in enabling the fixing of the standard value of silver as a staple in the United States instead of in Great Britain, for the South American states are essentially silver communities. I might also call your attention to the fact that the wheat for this coast can come all the way from St. Paul, Minn., or Omaha, Neb., by means of water transportation.

I am led to believe that if parties in the United States were to establish flouring mills at this place, or at Carthagena, all the machinery for these mills, and all the material necessary for their construction, would be admitted free of duty; nay, more, I make bold to say that every bushel of wheat needed for these mills would be admitted free of duty; and this is the one great point I wish to make in this report. Unable to create such a market for our flour as we ought to have, we should strive to create one for the raw product.

The consummation of this by American millers would be an entering wedge, which would be of telling effect between the trade of the United States and Colombia for the future. Concessions by the government of Colombia can be secured for all this, which will, so to speak, give a monopoly to the United States for the wheat to be used here.

### Protection of Inventions in Switzerland.

CONSUL GIFFORD.

THE Swiss people have adopted an amendment to the Federal constitution by which the power to legislate in regard to patents is conferred, with certain restrictions, on the general government. As is well known, Switzerland does not at present afford any protection to inventors, having hitherto combated, both in theory and practice, the ideas which prevail in most other civilized countries on this subject. The change contemplated but not assured by the amendment is the result of an agitation which began many years ago. In 1882 an amendment similar to the present one was submitted to the people, but was defeated by a large majority. Several branches of industry, notably those occupied with the production of textiles and paints and colors, vigorously opposed the protection of inventions, holding that any general patent law would be detrimental to their interests. But the question was further discussed in the newspapers, among the people, and in the Federal Council and legislative bodies with that thoroughness which is characteristic of the Swiss people.

The result was the adoption of the new amendment by a vote of 192,000 to 57,000. To secure this result, however, it has been necessary to make large concessions to the opposing interests. Textiles, dyes and paints cannot be included in the proposed legislation. Moreover, the patent law to be framed in conformity with the amended constitution must only provide for the protection of important inventions, to the exclusion of trifling improvements and inconsiderable novelties. In short, it is proposed to give the patent office as little to do as possible, and to restrict the expenses and the number of employees to a minimum.

The task of the Federal Government in framing a law conforming to the constitution will be no light one. And, once framed and adopted



by the legislative bodies, such a law will not go into effect, as a matter of course, on the day determined in the act itself but will continue for the space of ninety days subject to the contingency of a *referendum*, that is, to submission to a popular vote on the written demand of 30,000 persons entitled to the right of suffrage. It is already predicted that unless full force is given to the restrictive clauses of the constitution the people will reject the law when it comes before them. It is even said that the recent partial success of the friends of the patent system was due rather to the negligence of the opposing party and a consequent light vote than to any change in the opinions of a majority of the people, the general feeling having been that there was no danger of a reversal of the verdict of 1882.

The result will have a certain importance for inventors and owners of patents of mechanical contrivances in the United States. They are now wholly without security in this country, while the new legislation, even if as rigorously restricted as proposed, would give them protection for those inventions and improvements which are most frequent and most important in America.

## Foreign Notes.

### Argentine Republic.

The Argentine nation is rushing into European loans and the issue of additional paper money at such a rate that the Buenos Ayres correspondent, "G. M.," of the *Diario de Barcelona* feels induced to write, under date September 24: "European capital invested in the foreign and home debts of the nation as well as the provinces, in 'cédulas hipotecarias,' tramways, railroads, banks, industries and mercantile firms, represents an enormous amount. It is my belief that it does not fall short of \$700,000,000 gold, on which I estimate the average interest to be 9 per cent., which would amount to an annual interest of \$63,000,000, and adding thereto the excess of imports over exports of \$27,000,000, the country will have to remit to Europe per annum something like \$90,000,000 gold. This explains why in spite of all the gold we are receiving from Europe the gold premium does not decline. Suppose anything unforeseen to occur politically or economically, what is likely to be the result?"

### Brazil.

A cable, dated Pernambuco, October 29, states that the Brazil sugar crop is more backward than expected, and that the markets are excited and advancing. Borstelmann & Co., Pernambuco, September 27, write: Since our last report of August 27 the new sugar campaign has opened with a sale of 8,000 bags new Pernams and 3,000 bags Goianans at 1,200 to 1,350 reis for good Americanos, equal to 10s. 3½d. to 11s. 4d., cost, freight and commission, the Pernams, and 1,425 to 1,450, equal to 10s. 8d. to 10s. 10d., the Goianans. Receipts light, but as the weather is clearing there may soon be a better supply. Average daily receipts, 1,060 bags. Shipments from October 1, 1886, to date, 143,896 tons against 93,460 the previous year. Nothing doing at outports.

F. W. Winkel reports from Bahia, September 26: The first sales of new sugars were made, being 5,000 bags Nazareths, at 900 to 1,100 reis. No receipts to speak of are in sight, but crop prospects are favorable. Cocoa—A brisk demand has prevailed and is likely to continue, 3,200 bags selling at 7,200 reis. Redwood, without anything doing, is nominally worth 360 reis, while of rosewood 100 tons were consigned to Havre; the same may be quoted 1,500 to 1,600 reis. Exchange, 22¼d.

A cable from Para, October 29, states that instead of 1,800 tons india-rubber receipts expected in October only 1,050 tons arrived, and that prices have been advanced by holders in consequence. Mail advices, dated October 1, quote fine 2,350 reis, and coarse, 1,450, which was then considered too low a price to induce holders to part with what they had accumulated.

### Ceylon.

Coffee shipments from October 1 to September 14 were 8,655 tons, against 11,039 in 1886, and 14,951 in 1885. They quote native, free on board, per cwt 56 rupees; coconut oil, per ton, 277.50 rupees; chinchona bark, per unit of sulphate of quinine, 12½c. per pound; plumbago, 40 to 160 rupees, as to quality, per ton; coir yarn, 7 to 12 rupees per cwt. for No. 1 to 4. Out of 237,158 cwt. of plumbago shipped from October 1 to September 22, 155,609 went to the United States and only 65,182 to England, and out of 8,163,191 ounces of citronella oil shipped the United States received 4,360,492 ounces and England 3,719,993 ounces.

### Chili.

Weber & Co.'s (Valparaiso) semi-monthly review of September 2 reports about nitrate of soda that the market has been quiet, little offering, at \$2.72½ to \$2.75, 95 per cent., and \$2.77½, 96 per cent., equal to 8s. per cwt. in England, sales not exceeding 160,000 quintals, and charters for Europe summing up 59,700 tons. Copper was moderately active at \$16.20 to \$16.25, at which 11,027 quintals changed hands, equal to £39 19s. 3d. in England. The stock of wheat was ex-

hausted and there was no price, while barley was worth \$4.30 the 155 pounds, in bags. Flour—Santiago brands were selling at \$8.37½ the double quintal, and Southern \$8.12½. Exchange, ninety days, London, 25d.

### China.

The semi-monthly tea report of Siemssen & Co., Hong Kong, September 8, states that a large business has been done at Shanghai in black teas since freights were lowered; this has likewise been the case at Foochow in the better descriptions of congous. At Amoy Formosa oolongs were quiet under a heavy stock of 100,000 half-chests. Hoyune congous had improved a tael per picul at Canton, the bulk of dealings being in inferior sorts, while a fair amount of trade had been transacted in scented capers at steady figures, orange Pekoes also participating in the revival.

#### TOTAL EXPORT TO DATE FROM ALL CHINA.

	Season 1887-8.	Season 1886-7.
To England.....	pounds. 70,550,019	104,350,853
America.....	11,650,788	17,800,811
Continent (without Russia).....	1,034,206	1,091,666
Russia.....	11,770,251	11,486,597
Australia.....	18,808,448	15,071,260
South Africa.....	1,467,093	380,000
Totals.....	115,370,805	150,559,187

The falling off to England and America will be noticed.

### Cochin China.

Baere & Co. write from Saigon, September 4, that although there is still every reason why rice ought to decline, it does not, cleaned also being well sustained. The fact is that both Manila and Hong Kong continue buying, and that quite a heavy business has been done. The fortnight's export reached 226,053 piculs. Prime white cargo, mill polished, was bringing \$2.07 per picul. The export of rice since January 1 amounted to 6,263,415 piculs, against 6,407,250 last year. Black pepper was scarce at \$22.50 per picul. Coprah was neglected at \$3.85 per picul. Cowhides of good quality were wanted at \$15.75 to \$19 per picul; inferior lower. Buffalo hides steady at \$9 to \$10. Horns were slightly lower: 5½-pound horns were offering at \$12.35, 3 at \$11.40, and 2 at \$10.20. Exchange on Paris, documentary, 4.05 frs.; on London, four months' sight bank bills were selling at 3s. 2½d.

### Ecuador.

O. Wolfram & Co. report from Guayaquil, under date October 5, that the cocoa market was tending upward. Arriba was quoted \$23 to \$23.50; Balao \$19, and Machala \$18, all per quintal on shore, which at 62 per cent. exchange would correspond to 71s. 2d. to 72s. 8d. per cwt. free on board for Arriba; 59s. 4d. for Balao, and 56s. 3d. for Machala, per steamer. Machala was becoming very scarce, the crop apparently being at an end. Total receipts since January 1: 203,601 quintals, against 337,116 last year, 176,092 in 1885 and 155,294 in 1884. Ivory nuts were steady at \$3.50 to \$4 per quintal, which equals 12s. to 13s. 5d. per cwt. free on board. Shipments since January 1 have amounted to 237,159 quintals, against 132,874 last year, 142,376 in 1885 and 70,321 in 1884. Exchange, bank bills against sucres, three days' sight in New York, 39 per cent.

### France.

The French papers are reducing beet-root sugar crop estimates to below 500,000 tons for France, the *Journal des Fabricants de Sucre* speaking of 450,000 to 475,000 tons, the yield per hectare in good districts averaging 25 tons, against 35 last year, while the quality is rather better. In Germany it is not likely that last year's yield will be reached. There is nothing new of special interest as regards the future supplies of cane sugar; it is too early to obtain reliable estimates of either British or other West India crops; the Brazils are likely to show a somewhat larger yield than the last, which will be chiefly absorbed by the United States, and as to Eastern sources of supply the present range of values does not tend to stimulate shipments to Europe. There is no doubt that the statistical position has been steadily improving for some years, and that the consumption of the world is really much larger than shown by any published returns; in fact, it seems that at the recent level of prices it has been gradually overtaking the rate of production. Visible supply in Europe and America October 21, 603,863 tons, against 763,505 tons same time last year, and 902,823 in 1885. Price in Paris, No. 3 white, 37.25 frs., against 31.50 frs. last year, and 48.25 in 1885.

The Lyons silk market was quiet, orders for silk goods for the spring campaign coming in more slowly than they usually do, so that the heavy dealings will take place in all likelihood in November and December. Meanwhile all the remaining European, together with Asiatic markets, were equally dull, but firm.

The French vintage terminated successfully everywhere except in a few localities like the Champagne, where the last days were cold and rainy. While the size of the French yield will not come up to expectations, the quality is fine very nearly everywhere. The campaign opened in a spirited manner at Bordeaux, with very large dealings in new wines, especially Palus, which have been nearly all sold up to 1,000 frs. the ton. Prices are comparatively high, prospects for a good trade being most encouraging.

### Germany.

In October there was rather less buoyancy in the iron and steel markets in Rhenish Westphalia and Upper Silesia, the lull being partially due



to the less favorable news from the United States. There was, however, no decline; on the contrary, several articles were higher in consequence of the syndicates that have gone on multiplying, chief among them the one of all German rolling-mill owners with a common sales office at Berlin. While the domestic demand remains active, the export demand had become flat.

The new Spirit Tax law is far from working to satisfaction in the interior. It causes a good deal of trouble before it begins to operate regularly. The Hamburg rectifiers bitterly complain of the strictures against their spirit in Spain, which for the moment threaten to put a stop to exportation from Hamburg to that country. This can, however, only be temporary, as the "most-favored nation clause" in the Hispano-German treaty of commerce does not admit of Swedish spirit faring any better in the long run than Hamburg in Spain.

The stock of sugar in Hamburg has been largely reduced. The offers of new crop German beet sugar are becoming more abundant, and for 88 per cent. prices have fluctuated  $1\frac{1}{2}$ d. to 3d. per cwt. in the London market, ranging from 11s. 9d. to 11s. 10 $\frac{1}{2}$ d. for old to 11s. 10 $\frac{1}{2}$ d. and 12s. for prompt delivery of new crop, at which sales of some importance were made during the third week of October. Forward deliveries of new crop range from 12s. to 12s. 3d. for November-December, and 12s. 4 $\frac{1}{2}$ d. and 12s. 7 $\frac{1}{2}$ d. for January-March. As for the German beet-root crop news, it confirms the probable reduction of estimates as anticipated.

There is great disappointment about the vintage in Rhenish Hesse and other German home-growing districts, if we except the Moselle and Alsace-Lorraine. In October at least tolerably fine weather was indispensable, instead of which at night the thermometer was at times nearly down to the freezing point, and during the day rain was pouring down, so that at best a barely average crop is secured, and there was a rush to secure 1886 and older wines up to 1,000 marks per ton medium quality.

### Greece.

Mail advices from Patras are dated October 12, and state with reference to currants that the export demand has been steadily on the increase and that higher prices have had to be paid at Patras, on the coast as well as at Pyrgos. Many holders have entirely withdrawn from the market. Price last paid were: For Filiatra Kyparissia, 20s. 3d. to 20s. 6d.; Campos and Gargaliano, 20s.; Provincial, 19s. 6d.; Pyrgos, 19s. 6d.; Patras Serraglia, 21s. to 21s. 6d. free on board, in boxes; Patras Casalina, 23s. to 24s. 6d. in half boxes. The stock of Vostizza and Gulf currants was exhausted. For France large lines were bought on the coast at 45 frs., with freight and insurance for Marseilles, and at 46 frs. for Rouen. More would be taken for France at one franc less, but as one-half of the currant crop has been shipped and France only took 10,500 tons so far, against 45,000 tons in 1886, rates asked will have to be submitted to. At Patras, out of a stock of 30,000 tons, 1,500 were sold the last few days.

### Holland.

While publishing its last monthly coffee review the *Nederlandsche Courant* remarks that the decline in coffee is mainly due to the favorable advices from Brazil relating to the 1887-8 crop, and the decreased deliveries in Europe and America, as shown below:

#### ARRIVALS DURING THE FIRST EIGHT MONTHS.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	279,130	240,030	314,740	283,140	343,680	287,300
America.....	135,206	151,992	145,930	123,169	134,587	130,868
Totals.....	414,336	392,022	460,670	411,309	478,267	418,168

#### DELIVERIES TO CONSUMPTION.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	240,630	286,790	281,640	256,590	278,080	255,150
America.....	118,170	157,294	154,571	130,305	135,313	131,758
Totals.....	367,800	444,074	436,211	395,895	413,393	386,908

#### STOCKS AUGUST 31.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	138,100	123,300	184,400	188,100	189,500	151,100
America.....	38,261	28,387	29,206	23,323	23,427	24,691
Totals.....	176,361	156,687	213,606	211,423	212,927	175,791

To which have to be added, unsold in Netherland Trading Company's hands: 1887, 227,813 bags; 1886, 219,694 bags; 1885, 494,524 bags.

#### AMERICAN MOVEMENT.

	1887.	1886.	1885.	1884.	1883.	1882.
Import, eight m'ths.tons.	135,206	151,992	145,930	123,169	134,587	130,868
Consumption.....	118,002	156,112	154,472	139,154	127,473	136,558
Exports.....	168	194	100	111	111	2,522
Deliveries.....	118,170	157,294	154,571	139,305	135,313	139,080
Stock, August 31.....	38,261	28,387	29,206	23,323	23,427	24,691

### Italy.

P. G. Barff & Co., Naples, October 15, write about olive oil that the settlement of contracts has been laborious, having commenced October 10, and as some Gioja warrants could only be placed with great difficulty there was a general giving way of 10s. The closing quotation per ton, free on board, was: Gallipoli, £32 to £32 10s.; Gioja, £30 5s. to £30 15s. The export demand was mean-

while but light; later on some large dealings came to pass for Russia and England. Crop reports were less encouraging. At Tarante and Monopoli lack of rainfall was complained of, while at Gioja and Gallipoli, as well as in other districts, the sirocco winds and rainy weather had caused worms to again make their appearance. In a good many localities the olives had commenced to rot on the trees, and unless clear, dry weather soon comes to their relief, crop estimates will have to be materially reduced. Exchange, ninety days, London, 25.30 per pound sterling.

### India.

The *Times of India* publishes particulars of wheat shipments from British India during the past fourteen years:

Fiscal Years.	Tons.	Fiscal Years.	Tons.
1874.....	3,910	1881.....	372,218
1875.....	53,453	1882.....	993,176
1876.....	124,909	1883.....	702,220
1877.....	279,176	1884.....	1,047,824
1878.....	317,007	1885.....	791,537
1879.....	52,216	1886.....	1,053,026
1880.....	100,778	1887.....	1,113,167
Total.....	940,469	Total.....	6,073,168

From the foregoing table it appears that the amount shipped during the last seven years was nearly seven times that of the preceding seven years, the stimulus having been given by the extension of India's railroad system, the Suez Canal, the decline in ocean freights and in silver.

Indigo crop prospects in Bengal point to a reduced yield, while the Madras crop will be an average one. Still, at the late London auction sale of October 12, the expected advance in Bengals did not take place, the sale being a dragging one and prices on the whole barely firm; 2,600 chests were sold. October London indigo sales compare as under:

	1887.	1886.	1885.	1884.	1883.
Bengal, Tirhoot, &c. .... chests.	1,012	1,799	2,119	1,790	1,123
Oude and Plant Oude.....	65	257	620	2,188	489
Madras and Vellore.....	466	218	323	575	1,122
Kurpah, &c.....	2,296	3,091	1,408	3,850	3,358
Sundry sorts.....	534	1,085	244	81	188
Withdrawn and not catalogued.....	497	450	336	316	380
Totals.....	5,770	6,000	5,050	8,750	6,660
Stock October 1.....	12,429	14,860	11,423	17,176	12,477
Deliveries January 1 to September 30.....	15,476	14,660	16,361	18,462	16,428
Madras shipments to Europe from September 1, 1886, to August 31, 1887.....	10,835	12,392	6,472	16,612	13,250

### Java.

Mail advices dated September 10 report a very active sugar market at Batavia, some 3,500,000 piculs having been taken out of the market during the fortnight at 8.25 to 9 guilders. Total shipments to Europe from July 1 to August 31 were 28,725 tons, against 20,047 in 1886. A moderate business was transacted in gum damar at 53 to 54 guilders. Black pepper enjoyed a good demand and whatever arrived was rapidly being taken at 41 to 41.75 guilders. India-Rubber—Benkoelen was selling in a small way for 130 to 115 guilders. At the government auction of Billiton tin 27,000 slabs averaged 70.52 guilders. Exchange, six months, London, 11.80 guilders. About the Java sugar crop the ensuing was cabled October 29: "The Java sugar crop is expected to show an increase of about 15 per cent. over the last year, but so far about 40,000 tons, or three times as much as last year for the same time, have been exported to China and diverted from England. It is a noticeable fact that several producing countries are exporting sugars to other sugar-producing countries more largely than usual, thus reducing supplies to Europe and the United States."

The government has reduced the estimate of its own coffee crop to 290,000 piculs, which compares with the crops of former years as follows: 1886, 816,932 piculs; 1885, 499,831; 1884, 1,011,787; 1883, 1,083,000, and 1882, 1,025,000 piculs. Private cables predict that the said government yield will not exceed 250,000 piculs, while the private Java crop is estimated at 125,000 piculs. The Malang coffee sold at Batavia at government auction, amounting to 25,000 piculs, averaged 57.75 guilders per picul. The next two sales of a similar quantity each are to come off on November 23 and December 21. At the Padang auction of 22,000 piculs, held on September 24, the average price obtained was 65.50 guilders per picul. The next sale is to come off on December 17. On June 30 the current government Padang coffee crop was estimated at 83,790 piculs; the present estimate does not exceed 60,000. From Macassar and Timor not over 40,000 piculs of coffee need be expected, against, respectively, 124,800 and 132,000 in 1886 and 1885; nor from Menado over 9,830, against 20,400 last year.

### Mauritius.

On September 24 the sugar market was still active, having been so all the month. Meanwhile the weather had become more propitious. Grinding operations were resumed on the estates, leading to copious receipts. Toward the close the inquiry for sugar abated somewhat, there being an absence of Australian orders. Receipts were so far 30,000 bags less than last year, but the stock 20,000 bags greater, because the Australian demand had not yet set in to its usual extent. Charters during the month amounted to 1,570 tons, of which 500 for Bombay, 650 for Australia and 500 for Cork for orders. Handsome white crystals were worth 12 rupees, or 18s. 10d.; good, 11.60, or 18s. 4d.; ordinary to medium, 11 20 to 11.40, or 17s. 9d. to 18s., and brown to good brown, 10.35 to 11, or 16s. 8d. to 17s. 5d. per cwt., with freight to Cork for orders. During the first half of September receipts were 161,087 bags, against 197,664 last year; stock, September 16, 133,687, against 114,037.



Shipments since August 1, 12,400 tons, against 16,541 in 1886. Exchange, ninety days, London, 1s. 5½d.

### New Zealand.

R. & W. R. Walker, Auckland, September 12, write about kauri gum that since their last report of August 15 there was a temporary advance of £2 per ton, followed after awhile by a decline of £2 to £3, the quotations at the close being for poor to medium quality, £38 to £40 per ton; fair to good, £40 to £43, and East Coast, £53 to £56, all crude. Receipts during the four weeks amounted to 596 tons, while the shipments were 12 tons to San Francisco, per Alameda; 465 tons, per Eleanor Vernon, to New York; 456 tons, per Arab, to New York, and 46 tons, per Kaikowra, to Australia; together 979 tons. Stock, 1,000 tons, including cargoes not cleared on board the C. W. Janes and Hermione. The C. W. Janes is loading for New York and the Hermione for London.

### Philippine Islands.

Ker & Co.'s Manila cable, October 24, reads as under: Hemp quiet; price per picul, \$9.50, against last year, same time, \$7.25; per ton, cost and freight, £33 17s. 6d., against £27 2s. 8d. in 1886; cleared for the United States since last cable, 12,000 bales, against none last year; since January 1, 190,000, against 130,000; loading for the United States, 45,000, against 29,000; cleared for England since January 1, 183,000, against 126,000; loading none, against 6,000; cleared to other countries, 34,000, against 32,000; receipts at all ports since last cable, 31,000, against 7,000; since January 1, 431,000, against 329,000 in 1886 and 361,000 in 1885. Sugar, extra superior, per picul, \$3.25; free on board, per ton, £10 12s. 6d.; current \$2.75, or £9 2s. 6d.; superior Iloilo, \$2.62½, or £8 17s.; Cebu, \$2.50, or £8 17s.; Taal, \$1.94, or £6 8s. 6d. Freight for hemp, \$5.50; for sugar, \$6. Exchange, 3s. 8½d.

### Portugal.

*O Commercio do Porto* reports the third week in October that the Portuguese vintage had terminated everywhere, and that not only an unusual abundance has been secured, but superior quality throughout. The glut of new wines was such in some districts that not casks enough could be found to put the whole into "adeaga." In the Douro prices opened as high as last year; in a few instances higher. The Minho has such an enormous yield that prices opened very low. In the Extremadura and Baierada prices opened lower than a year ago.

The September wine export from Oporto was as follows: To Germany, 305,796 litres; to Belgium, 33,022; to Brazil, 1,149,624; to the Argentine Republic, 20,577; to Denmark, 6,678; to the United States, 34,420; to France, 259,723; to Spain, 146; to Holland, 12,822; to England, 1,351,284; to American countries not named, 5,107; to Portuguese Africa, 765; to Portuguese Asia, 3,584; to Russia, 119, and to Sweden and Norway, 3,135; together, 1,196,802 litres, against 3,383,512 in September, 1886.

### Spain.

Reports from the Government Committee of Investigation to examine into the causes why agriculture does not flourish in Spain at present are being published in the *Diario de Barcelona* and other leading papers. The chief causes detrimental to Spanish agriculture seem to be high local taxation and a lack of financial facilities extended to farmers at a moderate rate of interest through the medium of agricultural banks, so far as the reports go.

The Spanish vintage does not quite come up to expectations in point of quantity, but the quality of the wine is admitted to be excellent, although at Valencia and Alicante the last few days of gathering the grapes were rainy and caused them to suffer somewhat. Prices have opened very low, first for the grapes, then for the must and now for the new wines. But this may change after a while, when the new wines from Spain get to be appreciated in France and elsewhere on account of their fine quality this year.

### Straits Settlements.

Gillfillan, Wood & Co., Singapore, report, under date September 7, about Gambier that supplies have been fairly abundant and met with a ready sale at \$6.47½ per picul, with a general feeling in favor of lower prices. There has been further buying for the United States. Black Pepper—The market closed steady, with buyers at \$23.30. Sales during the interval amounted to 250 tons. None but small lines were for sale. White pepper was in moderate supply, the price falling in sympathy with exchange, the quotation for 5 per cent. being \$38 per picul. Sago flour was in steady demand at \$1.07½ for Sarawak and \$1.90 for Brunei. Of pearl sago the sales were large at \$2.30 for small. Production was likely to decrease unless prices improved. Tapioca continued in very moderate supply and prices higher, flake bringing \$6.87½ and pearl \$6.75. Nutmegs were inactive and nominal. Of mace a small lot of mixed quality was taken at \$60 to \$90, leaving no stock on hand. Gum Damar—Inferior quality brought \$16 to \$17.50 per picul. Exchange, six months' sight, was steady at 3s. 0½d.

### Uruguay.

*El Comercio*, of Montevideo, September 23, reports a quiet and rather weak market for dry hides, there being but a light demand, while the stock was rapidly on the increase. Prices paid for the United States were \$6.10, which equals 8½d. cost and freight for 21-pound hides, and for kips \$6.10, or 9 1-16d. Sales during the fortnight were 1,000 hides for the United States, 21 pounds, at \$6; 1,300 ditto on private terms, 17,500 ditto at \$6.10 and 2,400 kips at \$6.10; for Spain, at \$4.50, some 300 rejected hides; for the United States, 2,000 ditto on private terms. Stock, 126,000 hides. Of salted 3,600 were taken at \$5.80. Nothing transpired in

wool, of which 14,800 arrobes arrived. Sheepskins were quiet, with sales of 250 bales at a variety of figures, leaving a stock of 449 bales. Horsehair was firmer, some 36 bales mixed were sold at \$16 to \$17; 13 on private terms, two unwashed cow at \$18, one at \$18.50 and twelve washed at \$21.50. Exchange on London, ninety days, 51½d. to 51¾d.

### Venezuela.

Advices from Caracas are to September 20, when dealings in coffee were restricted by the tenacity of holders. Unwashed was selling at \$23.25, washed at \$25. For a lot of 500 tons San Casimir, 1886 crop, the high price of \$27 was asked. Shipments during the fortnight, 100 tons. Cocoa—During the past week there was received at Laguayra 696 bags of cocoa, of which 455 were Rio Chico, Higuerote, Curiepe and other Barlovento localities; 152 Rio Caribes; 71 Choroni and Ocumare and 18 bags sundries. Last year the week's receipts were 910 bags. Following were the prices paid for above lots; Rio Chico, \$22, for red quality; Higuerote, \$22.50; Curiepe, \$22.50; Choroni, \$38, and Ocumare, superior, \$40 to \$42. There was no Rio Chico dark cocoa. Heavy rains have fallen at Barlovento, which have done the cocoa trees a great deal of good. With the beginning of November the first new cocoa is expected. Shipments during the fortnight, 11 tons, all to Europe.

### West Indies.

TRINIDAD.—E. P. Masson writes from Port of Spain, September 30, that the weather has been altogether too dry for sugar canes, and that it is to be hoped that rains may bring them some relief, as they have suffered from the drought. Since January 1 29,766 hogsheads, 13,029 tierces and 326,569 bags had been shipped, against same time last year 22,578, 12,275 and 193,248 respectively. Nothing had transpired in molasses; vacuum pan was held at 5c. per gallon. Cocoa had also suffered somewhat from the persistent drought, but crop prospects nevertheless remain encouraging. For the moment cocoa was scarce, the few lots arriving being readily taken at \$15.87½ the fanega for ordinary quality. Shipments since January 1 did not exceed 60,192 bags, being 26,498 less than last year. Asphaltum was steady; boiled at \$9 per ton, and crude at \$3. Shipments since January 1 amounted to 32,684 tons, against 30,430 last year, and 24,845 in 1885. Exchange, ninety days' sight, private bills, London, \$4.80.

CUBA.—Toward the close of October damage to sugar plantations by excessive rains and flooding was reported, and estimates continue at or below 600,000 tons, against 608,938 last year. Planters who had been discouraged last summer by the low prices then ruling, and abstained from grinding their canes, now repent bitterly the course they adopted in view of the good opinion which prevails everywhere as to near and remote future of the staple. Other planters, on the contrary, have made unusual efforts to turn out during the coming campaign as much sugar as their estates are capable of producing. Thus at Cienfuegos the "Constancia" plantation of Señor Abetegua will make 20,000 hogsheads centrifugal, and the "San Lino" of Señor Montalvo 10,000. This is due to the adoption of the Central Sugar-House system, and the "Constancia" will during future crops, after the one now growing, not unlikely turn out 40,000 hogsheads. The processes and machinery on similar estates are of course the latest and best.

A NEW process for making fuel gas was recently tried at Darby, Pa. Four retorts are used, making 50,000 cubic feet of gas every twenty-four hours. The gas is manufactured by direct process, and delivered to the holder after a simple washing. It is of 22 candle-power, and there is said to be absolutely no deposit from the gas flame. The process requires oil, the diffusion of which is effected by superheated dry steam. For illuminating purposes, and on a large scale, five gallons of oil are stated to make 1,000 feet of gas, although six gallons are required at Darby. The cost is, therefore, about 30 cents per 1,000 cubic feet for 22 candle-power gas. This gas has a heating capacity, it is claimed, exceeding considerably that of coal gas made in the ordinary way. At Darby it is taken a distance of fifty to seventy feet to a floor set with suitable turnaces for metallurgical purposes; and there it is used for melting steel, and for forging, welding, shaping, and manipulating iron and steel in every way. It gives a quick heat of the highest degree, 2,000° to 2,500°, cutting down every form of bar iron or bar steel placed in an opening of any one of the furnaces, and this without the use of any solid fuel. The method of developing the heat is accomplished, says a contemporary, "by using an air blast of about 6-ounce pressure, delivered into a combustion chamber from opposite sides. The illuminating gas is delivered through a half inch pipe, at right angles to the air pipe, and within a few inches of the outer wall of the furnace. At this point the gas and the air blast mingle, forming an explosive mixture; the combustion and evolution of heat being instantaneous. This instant production of a high degree of heat without other fuel than one volume of illuminating gas with fifteen volumes of cold air is the great characteristic. A perfect heat for melting steel (2,500°) was attained in this instance in two hours and twenty-seven minutes by the use of 1,400 cubic feet of gas, as measured by the meter. The crucible on this occasion contained 100 pounds of scrap steel."



# Review of the Markets.

## Reports for the Month Ended November 1.

**Butter.**—The market is firm for the finer grades; other grades are about steady. There is a moderate trade in progress. We quote: Creamery, 16@26c.; State dairy, 16@24c.; Western, 12½@20c.

**Cheese.**—The market is somewhat stronger and holders are asking better prices. The demand is only moderate. We quote: Factory, best white, 11½@11¾c.; do., best colored, 11¼@11½c.; do., good, 10@10½c.; light skims, best, 8½@9c.; skims, common, 5@7c.; Ohio factory, fine, 11c.; do., fair, 9½@10c.

**Coffee.**—Options in Rio grades have been sensitive and there is an unsettled feeling, owing to the wide range which fluctuations have taken. We note sales on the basis of 18½c. for fair, at which the market closed firm, offerings being light. The monthly Rio coffee statement of William Scott's Sons is as follows:

Stock in warehouses October 1, 1887.....	bags.	376,105
Received since		
At New York.....	bags.	97,620
Baltimore.....		3,555
New Orleans.....		26,436
		127,611
Total supply.....		503,716
Delivered from warehouses since—		
At New York.....	bags.	170,333
Baltimore.....		16,306
New Orleans.....		8,980
		195,608
Stock in warehouses November 1, 1887—		
At New York.....	bags.	248,138
Baltimore.....		26,014
New Orleans.....		33,956
		308,108
Afloat and loading for United States to October 4.....		7,000
Purchased for United States to October 30 (18,000 Santos).....		140,000
Total visible supply November 1, 1887.....	bags.	455,108

Mild coffees have been very quiet, owing to the unsettled condition of Rio grades, late sales comprising small lots of Savanilla and Costa Rica on p. t. We quote: Rio, ordinary cargoes, per pound, 17½c.; fair do., 18½c.; good do., 18¾c.; prime do., 19c. Santos, fair to good cargoes, 18½@18¾c.; Java, 20@26½c.; Singapore, —@—c.; Ceylon, 22@23c.; Maracaibo, 19½@20½c.; La Guayra, 18@20½c.; Jamaica, 17½@19c.; San Domingo, —@—c.; Porto Rico, —@—c.; Central America, 18@20½c.; Mexican, 18@20c.; Angostura, —@—c.; Savanilla, 18½@21c.; Mocha, 24@25½c.

**Cotton.**—"Spot" is dull and closed at 9¼@9½c. for middling. Options have been in fair movement and closed higher. Final figures were: November, 9.60c.; December, 9.57c.; January, 9.60c.; February, 9.68c.; March, 9.75c.; April, 9.82c.; May, 9.90c.; June, 9.97c.; July, 10.03c.; August, 10.08c.

**Drugs and Chemicals.**—There has been a fair trade in small lots and prices are generally steady. We quote: Bleaching powders, \$2.12@2.25; caustic soda, \$2.40; soda ash, \$1.25@1.30; sal soda, \$1.25@1.37½; acetic acid, 2½@2¾c.; oxalic acid, 8@8½c.; citric acid, 50@51c.; tartaric acid, 43@45c. for crystals; acetate of lime, 1.80@1.85c. for brown; aloes, 5½@6c. for Cape; alum, \$1.75 @1.87½ for lump and \$1.87½@2 for ground; ammonia carbonate, 7½c. for English; assafetida, 8@10c.; arnica flowers, 6¼@8c.; albumen, 15¼@16c. for foreign blood; arsenic, 2½@2¾c.; balsam copaiba, 45@50c.; balsam tolu, 35 @37c.; balsam Peru, \$1.15; bichromate of potash, 10½c. for Scotch; borax, 60 @6½c. for refined; blue vitriol, 4¼@4½c.; brimstone, —@— for seconds; buchu leaves, 6½c. for shorts and 24@25c. for long; cantharides, \$1.65@1.70 for Russian; camphor, refined, 22c.; castor oil, 16@17c. in bbls. and cases; cardamoms, 60@80c. for Aleppo and 75c.@\$1 for Malabar; cassia buds, 10½c.; camomile flowers, 30 @37½c. for Roman and 15@23c. for new German; cutch, 6¼@8c.; chlorate of potash, 19@15½c. for crystals and 15¼@15½c. for powdered; cochineal, 29@30c. for Tenerife silver; cream tartar, 34@35c. for crystals and 35@36c. for powdered; gambier, 5¼@5½c.; ginger, 16c. for Jamaica bleached and 10½@13c. for unbleached; glycerine, 22@24c.; Guarana, \$1.35@1.45; iodide of potash, \$2.70@2.83; licorice paste, 28@29c. for P. & S. and 30@32c. for Corigliano; manna, 42¼@45c. for small flake and 80@82c. for large flake; morphine, \$2.95@3.25 for domestic; opium, \$4.30 for new, duty paid; oil cloves, \$1.65@1.80; oil cassia, 60c.; oil anise, \$1.85 @1.90; oil lemon, \$1.65@1.85, as to brand; oil sassafras, 42@46c.; oil wintergreen, \$1.85@1.90; oil bergamot, \$2@2.75; oil peppermint, \$1.90@2.10 in tin and \$2.60 in glass; prussiate of potash, 19½c. for yellow; quicksilver, 53¼@55c.; quinine, 29 @34c. for German and 37@50c. for American; roots, 3¼@4c. for gentian; Seneca root, 35c., and Colombo root, 7½@12c.; ginseng, \$2@2.20; sarsaparilla, 7@7½c. for Mexican; seeds, 5¼@5½c. for Trieste brown mustard and 4@4½c. for California yellow; senna, 30@32c. for Alexandria; shellac, for D. C. 20@21c. per lb.; V. S. O., 15c. per lb.; I in diamond, 15¼@16c. per lb.; sticklac, —c. per lb.; sugar of lead, 5¼@5½c. for brown and 12c. for white; tonka beans, \$1.25@1.40 for Angostura.

**Dry Goods.**—While there is nothing in the way of special activity, there is a fair trade in progress. There is a very fair call for plain and colored cottons by jobbers and the manufacturing trade, while there is a steady movement of brown, bleached and colored cottons, cotton flannels, &c., on account of former transactions now in execution. Stocks are generally in good shape, and prices are firm all along the line. Brown sheetings and drills are in steady demand by jobbers and converters, and agents report a fair business in bleached goods, wide sheetings, cotton flannels, corset jeans and satteens. Colored cottons, as denims, ticks, chevions, ducks, checks, plaids, &c., are in fair request by jobbers and the manufacturing

trade, and sileasias and flat-fold cambrics are in steady demand. White goods are meeting with a good deal of attention, and leading makes are well under the control of orders for future delivery. Print cloths were in moderate demand, and prices remain steady on the basis of 3¼c. for 64x64's and 2 13-16c. for 66x66's. For prints there is a moderate demand at first hands for choice styles of calicoes, but ordinary fancies are quiet, with an irregular business in indigo-blues and shirtings. There is a steady request of good proportions for dress ginghams, &c., for next season, and productions of leading makes are well under control of orders for later delivery. Seersuckers are doing well, and staple ginghams are moving steadily at firm prices. Worst dress goods are quiet at first hands and in moderate demand at jobbers' hands. Fancy cotton fabrics are moving irregularly. In woollens light-weight coatings are in moderate trade, but heavy weights are quiet. There is a fair-sized business being transacted in cotton hosiery and light-weight underwear, but heavy goods are somewhat neglected and the market is slow. Trade in foreign goods is rather slow, and purchases are small and confined mostly to staples.

**Freights.**—Quietude has been the only feature in berth freights, and nothing has been done calling for special mention. Grain room is plenty, but not abundant, and the old uniform rate of 3¼d. has obtained to most of the United Kingdom ports, with little actually done. Grain charters are very slow, but, with little tonnage seeking, rates are pretty well sustained. The demand for direct cotton steamers continues moderate and reduces the number of vessels available for grain. Rates are pretty full, although the business consummated has been small. Oil vessels have not been much sought after, and, in fact, quiet has reigned throughout the entire market, even miscellaneous business having been light, the River Plate trades showing the most animation. West India vessels meet with steady employment and command full rates. Lumber business coastwise is slow and rates easy. Colliers are unchanged.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provis. ns.	Cheese.	Beef.	Pork.	Cotton.
Liverpool	3¼@3½	10.	10@12.6	15.	17.6@20	25.	3.	2.6	5-323-16
London	3½	12.6	12.6	12.6	17.6	22.6	3.	2.	....
Glasgow	3½	11.3	12.6	12.6	17.6@20	30.	3.0	2.9	....
Bristol	asked 4¼*	13.0	13.9	15.	17.6@20	25.	4.	3.	....
Leith	asked 4*	12.6	13.9	15.	20.	22.6	4.	3.	....
Hull	3½	12.6	13.9	15.6	20.	25.	4.	3.	....
N'wcastle	4 asked.	12.6	13.9	12.6	20.	25.	4.	3.	....
Antwerp	4 asked.	10.	12.6	..	15@17.6	..	..	..	1/2@3-22d
Hamburg	45*	..	..	..	80 pf.	..	..	..	3-16d.
Bremen	50	..	..	..	80.	..	..	..	3-16d.
Copenh'n	2.9	..	..	..	22.6	..	..	..	....
Marseilles	2.9	..	..	..	20@25	..	..	..	....

\* Store.

Cork for orders, sail, 3s. 6d. Steam, 3s. 3d.@3.6. Direct port, United Kingdom, 3@6d. less.

### OIL QUOTATIONS.

	Refined Petroleum.	Naphtha.	Cases.
Cork and United Kingdom.....	2.0@3.	2.9@3.3.	Levant..... 16
Direct port, United Kingdom.....	2.3@2.9.	2.6@3.	Adriatic..... 15
Direct Continent.....	2.3@2.9.	2.6@3.	Mediterranean. 12@16
Baltic.....	....	....	....

**Fruits.**—Raisins are freer as to offerings, but prices are unchanged. Currants are easy, and Turkey prunes are not held as steady. We quote: Raisins—Muscatel, loose, new, \$2.10; do. London, new, \$2.50@2.55; do. Sultana, 7½@8c.; do. new Valencia, 6½c.; do. new Valencia layers, 9½@9¾c. Almonds—Princess paper shelled, 2¼@2½c.; Valencia, shelled, 27c.; Jordan, 40c.; Tarragona, 14¼@14½c.; Ivica, 14c. French sardines, 11@11½c. for quarter boxes and 15@17c. for half boxes. Citron, 18@18½c. Currants, 5½c.; do., to arrive, 5½@5¾c. Figs, 10@15c. Turkey prunes, 3¼c.; do. shipments, 5½@16c. French prunes, to arrive, 60's and 90's, half boxes, 1c.; French prunes, to arrive, 40's and 60's, quarter boxes, 14c.; Bohemian prunes, 3c. Grenoble walnuts, 13c.; French, do., 8@8½c.; Naples do., 13¼@13½c. Sicily filberts, 8c. Dates, 4½@5c. for Persian in boxes; 6c. for fards, and 7½@7¾c. for cases. Brazil nuts, 6c.; Chili walnuts, new, 8c. In fresh fruits choice apples are strong, grapes are slow and barely steady, pears sell moderately, and choice cranberries sell at fair prices. In domestic dried evaporated apples are in fair request at firm prices, sun-dried are in moderate demand, peaches are the same and other fruits are wanted in a small way. We quote: Apples—Choice to fancy evaporated, 9@10½c.; common to prime evaporated, new, 7½@8½c.; sliced, new, 5@7½c.; chopped, 2½c.; cores and skins, 2@2½c. Cherries, pitted, 15@19c.; raspberries, evaporated, new, 24@24½c.; blackberries, prime, new, 8½@8¾c.; huckleberries, new, 10@11c. Peaches, sun-dried, peeled, new, 15@20c.; Delaware, evaporated, peeled, 28@32c.; Delaware, evaporated, unpeeled, 16@18c.

**Flour and Meal.**—The market for State, Western and city flour is steady, and there is a fair demand for both export and home consumption. We quote: No grade, \$1.90@2.10; fine, \$2.15@2.75; supers, \$2.45@3; extras, No. 2, \$3@3.25; extras No. 1, \$3.40@4.35; clear bakers', \$3.75@4; straight bakers', \$4@4.35; patents, \$4.30@4.90; city extras (European), in 140-lb. sacks, \$3.50@3.60; city West Indies, \$4.30@4.35; city patents, \$4.75@4.90. Southern flour is in light demand, but prices are generally unchanged. We quote: Fine, \$2.25@2.75; supers, \$2.75@3; extras, \$3.25@3.75; Richmond first, \$4.87½; Richmond second, \$4.37½; patents, \$4.50@4.60. Rye flour is steady on fair demands. We quote: Fine, \$2.35@2.60; superfine at \$3.35@3.60. Corn meal is steady and in fair demand. We quote: Western kiln dried at \$2.75@2.85; do. Western white, \$3.10@3.75; do. Brandywine, \$2.95; do. Western bags, 95c.@\$1.25.

**Grain.**—Under the influence of a considerable increase in the visible supply and with little speculative interest the market in wheat options has favored the buyer and prices closed lower. Final figures were: November, 83¾c.; December,



84½c.; January, 85¾c.; February, 86½c.; May, 89¾c.; December, 1888, 93¾c. Cash wheat has been in limited request and prices closed lower, with exporters doing nothing, as prices are still too high for them. Sales have been at 85¾@86¾c. for choice red winter to go in store, 84@87c. for ungraded, 85¾@85¾c. for ordinary No. 2 red and 84@84½c. for No. 2 spring. The movement in corn options has been only moderate and prices have favored the buyer, closing as follows: November, 53½c.; December, 52¾c.; January, 82¾c.; May, 83¾c. "Cash" corn has been less active, but prices are pretty well sustained. Closing sales were at 53¾c. for No. 2 mixed afloat, 53@54c. for small lots ungraded. Options in oats have been in fair request, and prices are not materially changed. Closing figures were: November, 33¾c.; December, 33¾c.; January, 34c.; May, 35¾c. "Cash" oats have been moving moderately, but closed low in favor of buyer. Closing sales were at 37c. for No. 1 white, 34¾@35c. for No. 2, 33¾@34c. for No. 3, 34c. for No. 1 mixed, 33c. for No. 2, 32¾c. for No. 3, 31c. for rejected, 34¾c. for No. 2 Chicago, 33@34c. for mixed on track, and 35@40c. for white on track.

**Leather.**—The demand for all grades has been fair, and values remain steady. Acid has been in good request for export, and a fair average business has been transacted. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 19½@20c.; middle do., 21@21½c.; heavy do., 21@21½c.; light seconds, 18@—c.; middle do., 19@—c.; heavy do., 19@—c.; damaged, all weights, 16@16½c.; common hide, light, first selection, 17½@18c.; middle do., 19½@20c.; heavy do., 20@20½c.; light seconds, 16@17c.; middle do., 17½@18c.; heavy do., 17½@18c.; damaged, all weights, 15@15½c.; rejects, 11@12c.; acid hides of all kinds, light, first selection, 17@18c.; middle do., 19½@20c.; heavy do., 20@24c.; light seconds, 16@16½c.; middle do., 17½@19c.; heavy do., 18@20½c.; damaged, all weights, 14@15½c. *Union Tanned*—Slaughter light backs, 29@30c.; middle backs, 29@30c.; middle backs, heavy, 29@30c.; second backs, 26@27c.; light crop, 25@27c.; middle crop, 25@27c.; crop seconds, 24@25c.; bellies, 13@13½c. *Calcutta Buffalo*—Light, 15@16c.; middle, 15@16c.; damaged, 13@14c.; poor damaged, 10@12c.

**Lumber.**—Trade has been somewhat irregular and on export account has been uncertain, but occasionally very fair sized orders are placed. Lath is in moderate supply, in good demand and is firm at \$2.25 per M. for Eastern. Quotations are: Spruce, random cargo, \$13@16 per M. feet; do., special cargo, \$16.50@18. White pine, South American shippers, per M. feet, \$28@29; do., West India shippers, \$27@29; do., box boards, \$15@18. Yellow pine, random cargo, \$19@21; do., special cargo, \$20@22; do., green flooring boards, \$18@19; do., dry flooring boards, \$21@23; do., siding, \$21@24; do., cargoes, f. o. b. Atlantic ports, rough, \$13@15; do., cargoes, f. o. b. Atlantic ports, dressed, \$18@20; do., cargoes, f. o. b. Gulf ports, rough, \$12@14; do., cargoes, f. o. b. Gulf ports, dressed, \$19@21.

**Metals.**—**Pig Iron.**—Lehigh brands of foundry are scarce and are difficult to get even at higher prices, so closely has the production been absorbed by deliveries. Otherwise the fresh business in the market has been moderate. Standard Lehigh brands of No. 1 X foundry are firmly held at \$21@21.50, and in a small way \$22 has been paid, but other brands can be bought at \$20.50@21. No. 2 X foundry is readily obtainable at \$19@19.50 for good brands, down to \$18.50 for inferior, and gray forge is fully offered at \$16.50@17.25. **Scotch Pig.**—The market has ruled quiet, with a moderate demand, and business in some instances checked by the firm views of importers. We quote prices: Coltness, \$21.50@21.75; Glengarnock, \$20@20.50; Gartsherrie, \$21@21.25; Summerlee, \$21.25@21.50; Eglinton, \$19.50; Langloan, \$20.50@21; Dalmellington, \$19.75@20; and Clyde, \$19.75@20. **Bessemer Pig.**—Foreign is nominally quoted \$19.50@19.75, with no demand. **Steel Rails.**—The market is dull and lower, but the easier tendency of values does not appear to stimulate the demand, and sales are difficult even at the decline. This year's delivery quoted \$33, but moderate sales for next year's delivery have been made at \$32 by a Pennsylvania mill. **Old Rails.**—The situation has undergone no change, consumers having shown no disposition to replenish their stocks, and in the absence of fresh business values remain almost wholly nominal. **Tees** are held at \$22.50, and D. H.'s at \$23, but the only obtainable bids are 50 cents lower. **Lead.**—The market for common pig has ruled dull and featureless, the only important business reported since our last issue, comprising 200 tons at 4.30c. Buyers bid 4½c. with 4.35c. asked, and business is possible midway between these two extremes, but there is very little demand. **Chicago** is dull at 4.10c. **Tin.**—The London market closed higher, say £120 10s. spot, and £119 futures, and values here have advanced correspondingly, November closing at 28¾c. Offerings are spot and future are light and there is very little disposition to sell, even at the advance, 30c. being freely bid on spot without sellers. We quote: Straits and Malacca, 30c. cash and 30½c. thirty days; Australian, 29c. cash; 29½c. thirty days. In plates the market has ruled firm, in consequence of the strong tone of tin. The demand is moderate. We quote: Charcoal, ½ cross assortment, Melyn grade, \$5.15@5.20, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$4.70, each additional X add \$1; charcoal terne, M. F. grade, 14x20, \$6.25@6.30; M. F. grade, 20x28, \$12.80; Worcester, 14x20, \$4.60@4.70; Worcester, 20x28, \$9.30; Dean grade, 14x20, \$4.30@4.32½; Dean grade, 20x28, \$8.70@8.75; Allaway grade, 14x20, \$4.20; Allaway grade, 20x28, \$8.45@8.50. I. C. coke—B. V. grade, \$4.42½@4.45; J. B. grade, 14x20, \$4.52½@4.55; I. C. Bessemer steel, squares, \$4.47½@4.50 basis; I. C. Siemens steel, squares, \$4.65 basis. Copper has been advancing rapidly and the market has been greatly excited. There has been an immense demand, largely speculative. At the close there is a good deal of irregularity, with quotations not defined. The English markets are also tending upward. **Lake** on the spot nominally about 12.15@12.25c., and the options as follows: 12.25@12.30c. for November; 12.35@12.40c. for December; 12.40@12.50c. for January. New sheathing at 18@19c.; braziers at 18c.; bolts at 18c.; American at 12c. for yellow metal sheathing.

**Molasses.**—The market for imported grades is quiet, and the demand shows no force. There have been sales of St. Vincent at 21c. and St. Croix at 20c. Domestic grades sell fairly, although the outlet is not proportioned to the receipts. We quote: Porto Rico, 27@38c.; Barbadoes, 25@28c.; Cuba, 50° test, @—; New Orleans, good, 43@45c.; prime, 46@47c.; choice, 48@50c.; syrup, 40@45c. There are

small stocks of syrups and the demand is very fair. Black strap is barely steady. We quote: Ordinary, 22@25c.; common, 26@27c.; fair to good, 28@29c.; prime to choice, 30@31c.

**Naval Stores.**—The market for spirits of turpentine is firmer, and there have been sales at 35@36½c., closing at the outside figure. Rosins are in moderate request. Common is unchanged, but pale is more active and firmer. We quote: Common, \$1 17½; good strained, \$1.25; E, \$1.35; F, \$1.42½@1.45; G, \$1.47½; H, \$1.50; I, \$1.60; K, \$1.70; M, \$1.80@1.85; N, \$2.10@2.15; W G, \$2.50@2.60, and W W, \$3.15@3.20. Tar is quiet and unchanged, closing at \$2.10. Pitch is quiet at \$1.35 f. o. b.

**Paper.**—The Straw-Wrapping Manufacturers' Association have issued a new schedule of rates to take effect November 1. No. 1 manillas are strong, and other grades are about steady. Book and news are in active demand. Writings are moving promptly from first hands and are steady as to prices. We quote: Fine flat caps, 13@15c.; superfine, 16@17c.; record and ledger, 18@22c.; supersized and calendered book, 7@8½c.; do. do., extra machine finish, 7@7½c.; do. do., low grade, 6½@7½c.; news, No. 1, 5c.; do. rag and wood, 4½@5c.; do., straw, 5½@5½c.; manillas, No. 1, light weight, 7½@8c.; do., heavy weight, 7@7½c.; No. 2 manillas, 5@6c.; bogus do., 2½@3c.; straw wrapping, heavy weight, 1½@2c.; do. do., light weight, 2½@2½c.

**Petroleum.**—Notwithstanding a pretty constant effort to "bear" the market, prices closed higher, final figures being 72½@73c. Refined barreled oil is firmly held at 6½c. for 70° Abel test. Transactions are moderate and the demand shows a little improvement. Case oil sells only in a moderate way, but is firm at 8½c. for plain brands. Crude in barrels closed at 6½c. for Bradford and 6½c. for Parler. Naphtha is quoted at 7½c. for city prime. Home trade lots barreled oil are quoted at 7c. for 110° test standard white; 7½c. for 120° test do.; 7½c. for 130° test do.; 8½c. for State test do., and 8½@8½c. for 150° test water white.

EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO OCTOBER 31.

	1887.	1886.
From Boston.....gals.	3,506,927	4,773,632
Philadelphia.....	136,002,211	126,104,472
Baltimore.....	6,502,266	13,344,229
Perth Amboy.....	13,622,729	4,850,046
Totals.....gals.	159,634,133	149,075,379
From New York.....	311,148,112	323,913,866
Total exports from United States.....gals.	470,782,245	472,989,245

**Provisions.**—"Cash" pork has ruled dull, but prices are about the same. We quote: Mess, \$13.50; new mess, \$14@14.25; extra prime, \$12.50; clear back, \$15@16; family winter, \$14; new, \$16. Options closed at Chicago, January, \$12.57½; February, \$12.57½. Bacon is dull, lower and nominal. We quote: Long clear, 7c.; short clear, 7.15c.; half each, 7.07½c.; short rib, 7c.; long clear West, 6.65c.; short clear, 6.80c.; short rib, 6.65c. Cut meats remain quiet, but prices are the same. We quote: Pickled shoulders, 5½@6c.; do. hams, 10@10½c.; bellies, 8@8½c.; fresh bellies, 8c.; fresh shoulders, 5½c.; fresh hams, 10c.; smoked shoulders, 7c.; do. hams, 11½@12c.; do. bellies, 10@12. Mess beef is quoted \$7@9 per barrel; plate, \$10; choice do., \$10.50@11.50; packet, \$8.50@9; extra India mess, \$11.50@12 per barrel, \$15@18 per tierce. Beef hams remain dull, and prices are nominal at \$15.75@16. Cash lard is lower on moderate requests. We quote: Prime Western steam, \$6.77½; city, \$6.60@6.70; Continental, \$7@7.10; South American, \$7.30@7.50. Options have been depressed. Closing figures were: November, \$6.65; December, \$6.60; January, \$6.65; February, \$6.70; March, \$6.76; April, \$6.82; May, \$6.89.

**Starch.**—Western corn is in fair demand, but prices are unchanged, the market closing at 2½c. for bbls. and 2½c. for bxs. Potato is in fair demand at 5@5½c.

**Stearine.**—The market is quiet and unchanged. We quote: Western, 7½@7½c., city, 7½c., and oleomargarine at 6½c.

**Sugar.**—Raw—The market has been quiet, but values reflect a strong tone, and closing sales have been at full prices. Prices have ruled firm on the basis of 5½c. for 80 test muscovados, and 5½c. for 96 test centrifugals. No business has been developed in Cuban cargoes on cost and freight terms, but centrifugals have been offered at 3½c. for 96 test, at which the market closed. New crop Brazils have been offered, to arrive, and there have been some sales to arrive. Closing sales have been Cuba centrifugals, 93.70 test, 5½c.; Cuba molasses, 84½ test, 4¾c.; Cuba muscovado, 80 test, 5½c.; St. Domingo centrifugals, 96 test, 5½c.; do. damaged, 95 test, 5½c. For refined there has been a fairly active demand, and the market is firm at a shade higher prices. We quote for export, less drawbacks: Cut loaf, \$4.43@4.45; cubes, \$4.23@4.31; crushed, \$4.43@4.55; powdered, \$4.25@4.31; granulated, \$4.12@4.18.

**Tea.**—The general condition of the market has been more or less unsatisfactory. The large offerings in the auction-rooms have attracted the greater portion of trade. Prices realized at the closing sale were as follows: Moyune hyson, 1½@21c.; young hyson, 8½@42½c.; imperial, 14@30c., and gunpowder, 13@55½c.; Pingsuey young hyson, 11c.; imperial, 19@24c. and gunpowder, 13@36c.; Japan, pan-fired, 11@23c.; basket-fired, 12@32c.; sun-dried, 18c.; siftings, 4½@6½c.; congou, 12@25c., and India, 13@26c.; oolong, Formosa, 17@27½c., and Amoy, 12½@16½c.

**Tobacco.**—For Kentucky there continues a strong market, with the demand moderately active. Prices for dark grades in the West have gradually advanced, and are now nearly as high as during July last. Burleigh is well sustained, with demand urgent. The new crop has all been housed. We quote: Common lugs, 4½@5½c.; good, 5@7c.; low leaf, 6½@7½c.; good, 9@11½c., and fine, 10½@16c. Virginia continues in moderate request at full previous prices. Quoted: 5@7c. for common to good lugs, 7½@9½c. for common to medium leaf, 10½@11½c. for medium to good dark do., and 12@13c. for good to fine dark do.; common to medium bright wrappers, 21@22c.; fair to good, 25@35c.; fine do., 35@50c.; common smokers, 6@10c.; good do., 12@15c.; fine cutters, 22½@27½c. Seed continues in steady,



fair demand, with sales of 1886 Pennsylvania Havana at @18c.; 1886 Wisconsin Havana, p. t.; 1886 Ohio, 7c., and 1886 New England Havana, at 14@35c. Foreign is steadily maintained. Sales Havana at 60c.@\$.05 and Sumatra at \$.15@\$.75.

## STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuegos.	Yara.
Stock October 1, 1887.....bales.	36,633	157	....	39	1,132
Received since.....	9,214	157	....	....	170
Totals.....bales.	45,847	157	....	39	1,302
Delivered since.....	7,418	....	....	39	200
Stock November 1, 1887...bales.	38,429	157	....	....	1,102

Wool.—We have to chronicle a very much better demand, especially for coarse

wools, and the market remains steady. Large sales of foreign are reported, generally on private terms. Cables advise that the opening prices of Australian wool at Melbourne are fully up to last year. The sales comprise: Scoured Texas, 62½c.; scoured California, 55c.; scoured Territory, 44c.; spring California, 20@22½c.; X and XX Ohio, 32@32½c.; fine delaine, 35½c.; ½-blood, 37½c.; Ohio, 31c.; unwashed fleece, 21c.; ¼-blood, combing, 38c.; Territory, 18@23c.; Oregon, 20@24c.; spring Texas, 17@19c.; new fall Western Texas, 14@16c.; also Georgia and Southern, spring Texas, machine extra pulled, Georgia fine unwashed fleece, fine fleece, bucks', X Ohio, fall Texas, spring Texas extra pulled, No. 1 do., Canada do., domestic noils, scoured Texas and East India on private terms. In addition to the above there were reports of large sales in Donskoi and Mediterranean wools at 25@26c. During the closing week several hundred bales Cape were sold in bond for Canada.

## Exports of Domestic Merchandise (Values Stated) from all Ports of the United States for the Month Ended September 30, 1887.

<b>Agricultural implements—</b>		<b>Fish—</b>		<b>Malt liquors—</b>	
Horse-powers.....	\$940	Salmon—Canned.....	\$133,375	In bottles.....	\$34,272
Mowers and reapers, and parts of.....	21,346	Other.....	4,236	Not in bottles.....	4,456
Plows and cultivators, and parts of.....	23,777	Canned fish other than salmon.....	3,474	<b>Marble and stone, and manufactures of—</b>	
All other, and parts of.....	24,892	Shell fish—		Unmanufactured.....	18,429
<b>Animals—</b>		Oysters.....	10,284	Manufactures of—	
Cattle.....	634,554	Other.....	20,900	Roofing slate.....	4,850
Hogs.....	10,842	All other fish.....	413	All other.....	37,784
Horses.....	83,618	<b>Flax, hemp and jute, manufactures of—</b>		Matches.....	4,021
Mules.....	10,150	Bags.....	15,391	<b>Musical instruments—</b>	
Sheep.....	20,629	Cordage.....	46,088	Organs.....	42,896
All other, and fowls.....	1,691	Twine.....	24,156	Pianofortes.....	16,576
Art works: paintings and statuary.....	8,213	All other.....	9,673	All other, and parts of.....	10,220
Bark, and extract of, for tanning.....	16,823	<b>Fruits, including nuts—</b>		<b>Naval stores—</b>	
Billiard and pool tables and apparatus.....	2,173	Apples, dried.....	18,877	Rosin.....	166,511
Blacking.....	16,737	Apples, green or ripe.....	124,887	Tar.....	1,197
Bones, hoofs, horns and horn tips, strips and waste.....	9,583	Fruits, preserved—		Turpentine and pitch.....	2,005
Books, maps, engravings, etchings and other printed matter.....	129,456	Canned.....	359,322	Oakum.....	2,236
Brass, and manufactures of.....	30,304	Other.....	2,173	Oil-cake and oil-cake meal.....	493,957
<b>Breadstuffs—</b>		All other, green, ripe or dried.....	32,946	<b>Oils—</b>	
Barley.....	17,252	Nuts.....	1,725	Animal—	
Bread and biscuit.....	54,456	Furs and fur-skins.....	1,693,810	Lard.....	64,078
Corn.....	926,815	Glass and glassware—		Sperm.....	31,243
Corn meal.....	70,206	Window glass.....	609	Whale and fish.....	50,137
Oats.....	18,747	All other.....	63,980	Other.....	44,317
Oatmeal.....	9,577	Glucose or grape sugar.....	11,895	Mineral, crude, including all natural oils, without regard to gravity.....	493,624
Rye.....	413	Glue.....	2,341	Mineral, refined or manufactured—	
Rye flour.....	292	Grease, grease scraps and all soap stock.....	69,025	Naphthas, including all lighter products of distillation.....	126,769
Wheat.....	4,789,021	Gunpowder and other explosives—		Illuminating.....	3,333,582
Wheat flour.....	5,429,780	Gunpowder.....	17,748	Lubricating and heavy paraffine oil.....	282,466
All other breadstuffs, and preparations of, used as food.....	57,021	All other.....	33,778	Residuum, including tar and all other, from which the light bodies have been distilled.....	124
<b>Bricks—</b>		Hair, and manufactures of.....	17,471	<b>Vegetable—</b>	
Building.....	1,721	Hides and skins, other than furs.....	46,558	Cotton seed.....	28,559
Fire.....	8,548	Honey.....	414	Linseed.....	3,847
Broom corn.....	16,927	Hops.....	60,054	Volatile or essential.....	14,578
Brooms and brushes.....	11,465	Ice.....	4,516	Other.....	5,157
Candles.....	9,168	India-rubber and gutta-percha, manufactures of—		Ore, gold and silver bearing.....	3,072
Carriages and horse-cars, and parts of.....	100,972	Boots and shoes.....	5,673	Paints and painters' colors.....	49,229
Cars, passenger and freight, for steam railroads.....	8,126	All other.....	66,501	Paper, and manufactures of—	
Casings for sausages.....	100,478	Ink, printers and other.....	7,020	Paper-hangings.....	3,697
<b>Chemicals, drugs, dyes and medicines—</b>		Instruments and apparatus for scientific purposes, including telegraph, telephone and other electric.....	38,952	Writing-paper and envelopes.....	10,524
Acids.....	20,350	<b>Iron and steel, and manufactures of—</b>		All other.....	57,738
Ashes, pot and pearl.....	4,000	Iron ore.....	870	Paraffine and paraffine wax.....	169,613
Dyes and dyestuffs.....	107,129	Pig iron.....	27,554	Plated ware.....	37,767
Ginseng.....	89,457	Band, hoop and scroll iron.....	381	<b>Provisions, comprising meat and dairy products—</b>	
Medicines, patent or proprietary.....	117,466	Bar iron.....	6,787	<b>Meat products—</b>	
Roots, herbs and barks, n. e. s.....	14,605	Car-wheels.....	8,231	<b>Beef products—</b>	
All other.....	184,970	Castings, n. e. s.....	14,052	Beef, canned.....	328,054
<b>Clocks and watches—</b>		Cutlery.....	12,230	Beef, fresh.....	588,055
Clocks and parts of.....	103,107	Firearms.....	58,243	Beef, salted or pickled.....	209,117
Watches, and parts of.....	18,476	Ingots, bars and rods of steel.....	4,746	Beef, other cured.....	15
<b>Coal—</b>		Locks, hinges, and other builders hardware.....	101,745	Tallow.....	277,802
Anthracite.....	539,756	Machinery, n. e. s.....	404,120	<b>Hog products—</b>	
Bituminous.....	197,237	Nails and spikes.....	39,326	Bacon.....	2,023,097
Coffee and cocoa, ground or prepared and chocolate.....	8,621	Plates and sheets—		Hams.....	323,055
<b>Copper, and manufactures of—</b>		Of iron.....	1,301	Pork, fresh.....	358,227
Ore.....	265,428	Of steel.....	120	Pork, pickled.....	2,325,681
Ingots, bars, and old.....	77,508	Printing-presses, and parts of.....	18,446	Lard.....	2,000
Sheets.....	353	Railroad bars or rails—		Mutton.....	2,410
All other manufactures of.....	4,540	Of iron.....	105,042	Oleomargarine.....	183,534
<b>Cotton, and manufactures of—</b>		Saws and tools.....	20,473	Imitation butter.....	387
Unmanufactured—		Scales and balances.....	199,685	The oil.....	51,126
Sea Island.....	5,800	Sewing machines, and parts of.....	24,100	<b>Dairy products—</b>	
Other.....	13,786,642	Steam-engines, and parts of—		Butter.....	200,982
Manufactures of—		Fire engines.....	13,031	Cheese.....	1,031,323
Cloths, colored.....	298,051	Locomotive engines.....	24,100	Milk.....	27,543
Cloths, uncolored.....	422,440	Stationary engines.....	13,031	Quicksilver.....	20,888
Wearing apparel.....	20,053	Boilers and parts of engines.....	12,007	Rags.....	1,070
All other.....	104,001	Stoves and ranges, and parts of.....	27,975	Rice.....	391
<b>Earthen, stone and china ware—</b>		Wire.....	25,410	Salt.....	2,391
Earthen and stone ware.....	16,970	All other manufactures of iron and steel.....	208,595	Seeds—	
China ware.....	1,544	Jewelry, and manufactures of gold and silver.....	31,168	Clover.....	28,750
Eggs.....	3,097	Lamps, chandeliers and all devices and appliances for illuminating purposes.....	40,618	Cotton.....	40
<b>Fancy articles—</b>		Lead, and manufactures of.....	9,153	Flaxseed or linseed.....	5,867
Perfumery and cosmetics.....	45,127	Leather, and manufactures of—		Timothy.....	5,249
Toys.....	5,212	Leather—		All other.....	30,577
All other.....	25,842	Ruff, grain, splits, and all finished upper leather.....	322,767	Silk, manufactures of.....	5,562
Fertilizers.....	210,353	Patent or enameled.....	3,349	Soap—	
<b>Fish—</b>		Sole.....	453,990	Toilet or fancy.....	5,899
Fresh, other than salmon.....	161	All other.....	31,591	All other.....	55,312
Dried, smoked or cured—		Manufactures of—		Spermaceti and spermaceti wax.....	7,529
Codfish, including haddock, hake and pollock.....	46,921	Boots and shoes.....	53,768	Spices, ground or prepared.....	1,580
Herring.....	3,855	Harness and saddles.....	17,146	<b>Spirits—</b>	
Other.....	7,482	All other.....	14,350	Alcohol.....	2,679
<b>Pickled—</b>		Lime and cement.....	7,829	Pure, neutral, or cologne spirits.....	35,665
Mackerel.....	7,554			Rum.....	
Herring.....	273				
Other.....	9,456				



Spirits—		Vessels sold to foreigners—		Wood, and manufactures of—	
Whiskey—Bourbon.....	\$6,527	Steamers.....	\$1,500	Timber—	
Rye.....	1,578	Sailing vessels.....	....	Sawed.....	\$215,348
All other.....	29,981	Vegetables—		Hewed.....	49,768
Spirits of turpentine.....	378,705	Beans and peas.....	27,083	Logs, and other timber.....	113,302
Starch.....	8,667	Onions.....	8,849	Manufactures of—	
Stationery, except of paper.....	35,955	Potatoes.....	48,661	Doors, sash and blinds.....	16,386
Stereotype and electrolyte plates.....	1,431	Vegetables, canned.....	27,614	Moldings and other house-finishings.....	6,695
Straw and palm leaf, manufactures of.....	6,576	All other, including pickles.....	11,794	Hogheads and barrels, empty.....	3,196
Sugar and molasses—		*Wax, bees'.....	3,163	Household furniture.....	199,261
Molasses and syrup.....	45,784	Whalebone.....	39,245	Wooden ware.....	23,147
Sugar, brown.....	421	Wine—		All other.....	98,124
Sugar, refined.....	111,085	In bottles.....	4,166	Wool, and manufactures of—	
Candy and confectionery.....	8,130	Not in bottles.....	16,639	Wool, raw.....	....
Tin, manufactures of.....	9,045	Wood, and manufactures of—		Carpets.....	527
Tobacco, and manufactures of—		Firewood.....	580	Flannels and blankets.....	3,333
Unmanufactured—		Lumber—		Wearing apparel.....	27,649
Leaf.....	3,276,548	Boards, deals and planks.....	457,422	All other manufactures of.....	11,375
Stems and trimmings.....	28,479	Joists and scantling.....	24,717	Zinc, and manufactures of—	
Manufactures of—		Hoops and hoop-poles.....	1,887	Ore or oxide.....	1,252
Cigars.....	4,106	Laths.....	803	Pigs, bars, plates and sheets.....	....
Cigarettes.....	46,360	Palings, pickets and bed-plats.....	838	All other manufactures of.....	289
All other.....	277,133	Shingles.....	5,301	Articles not elsewhere enumerated—	
Trunks, valises and traveling-bags.....	10,700	Shooks—Box.....	28,088	Unmanufactured articles.....	39,364
Umbrellas, parasols and sunshades.....	6	Other.....	43,037	Manufactured articles.....	49,451
Varnish.....	15,273	Staves and headings.....	120,737	Total value of exports for the month.....	\$54,568,855
Vinegar.....	1,379	All other lumber.....	159,546		

## Business Notices.

THE Peck, Stow & Wilcox Company, New York, U. S. A., manufactures an extensive line of hardware, embracing almost every article known to the trade. The catalogue of the company covers 652 pages, profusely illustrated, well indexed, and is a very complete guide to dealers in builders' hardware, house-furnishing hardware, carriage and wagon makers' supplies, carpenters' and tinners' tools, saddlery hardware, blacksmiths' tools, farmers' and gardeners' implements and, in fact, all lines of hardware for general use and mechanical purposes. It would be impossible to present a list of the varied articles—some thousands in number—manufactured by this house. Buyers can supply almost every want from this multifarious list of hardware manufactures. Mechanics of all classes, farmers, stationers, house-keepers and others can find in it tools and machines, furnishings, &c., for everyday use. The patterns of the different articles are of approved models, the goods are well finished, and the Peck, Stow & Wilcox Company will fit out dealers in any country with complete stocks of the best lines of American hardware, and will quote prices on application.

FOREIGN buyers of fine carriages in all varieties of form will find that the house of A. T. Demarest & Co., 636 and 638 Broadway, New York, U. S. A., makes the highest grade of equipages, unsurpassed in form, quality and finish. This firm sells carriages of its own manufacture exclusively. It has been many years in business, and has just issued an illustrated catalogue of its new patterns of summer and winter carriages for 1887-8. Parties wishing to buy carriages, light wagons, road carts, &c., should write for this catalogue, and should they desire to order by it they can, by addressing the firm, obtain full particulars as to size, weight, color and style of painting, trimming and lowest spot cash price. The firm employs only the best talent and most skilled workmen, and its productions are equal in style, quality and finish to any made in the world. Its warerooms, 636 and 638 Broadway, occupied since 1866, are the largest in New York, being 50 feet front by 200 feet deep, and contain in stock, finished, a magnificent variety of all the fashionable styles of carriages used for town and country driving. The firm gives the following warranty: "This carriage is guaranteed for one year from the date of purchase. If any part shall fail by reason of imperfect material or workmanship, we agree to make good such defects free of expense to the purchaser."

THE growth of the Chrome Steel Works, located in Brooklyn, N. Y., has surprised everyone acquainted with the difficulties met with in the past in establishing works of this class in the Northeastern States. It was only last spring that notice was made of the enlargement of these works and the substitution of gas for coal in their heating furnaces, necessitating the removal of their old furnaces and the putting in of "regenerators" in their stead. This new plant was made complete in every respect, even to the necessary apparatus for the manufacture of the gas used, and increased the productive capacity of the works twofold. Another advance step has been made, the firm being engaged at the present time in the construction of additional rolling-mill facilities under the cover of a structure 75x100 feet. The Chrome

Steel Works are the well-known manufacturers of the Chrome Steel Adamantine shoes and dies for stamp mills, which have of late years almost entirely supplemented the old-fashioned iron shoe and die in the mining regions of North and South America. They also make all descriptions of cast steel, as well as tool steel in all the salable shapes and sizes. Their combination plates of alternate layers (five-ply), iron and steel, being practically burglar-proof, have met with a great sale among builders of banking houses, safe-deposit vaults, jails and other structures.

## Catalogues and Price-Lists.

TO READERS.

THE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of THE MAIL in which they are noted.

SILVER & DEMING MANUFACTURING COMPANY, Salem, Ohio, U. S. A.—An illustrated catalogue and price-list, 120 pages, of pumps, hydraulic machinery, wagon makers', butchers' and blacksmiths' tools, &c.

SAMUEL HARRIS & Co., Chicago, Ill., U. S. A.—A 192-paged illustrated catalogue and price-list of machinists' supplies and tools of all kinds.

BIRDBELL MANUFACTURING COMPANY, South Bend, Ind., U. S. A.—Illustrated catalogue of wagons and light carriages.

A. T. DEMAREST & Co., New York, U. S. A.—Handsomely illustrated catalogue of fine carriages of every description, pleasure wagons, driving carts, &c.: 100 engravings.

METCALF, PAUL & Co., Pittsburg, Pa., U. S. A.—Illustrated catalogue of railway and track tools, &c.

CERRAR, ADAMS & Co., Chicago, Ill., U. S. A.—Catalogue and price-list of railway supplies, 450 pages, bound in russia leather and fully illustrated. A very commendable publication.

PRATT & WHITNEY COMPANY, Hartford, Conn., U. S. A.—Descriptive and illustrated catalogue, 216 pages, of machines and machine tools.

CHAMPION MANUFACTURING COMPANY, Quincy, Ill., U. S. A.—Illustrated descriptive catalogue of incubating apparatus.

BELLE CITY MANUFACTURING COMPANY, Racine, Wis., U. S. A.—Descriptive and illustrated catalogue of ensilage and fodder cutters, &c.

H. L. SHEPARD, Cincinnati, Ohio, U. S. A.—Illustrated catalogue and price-list of foot and power lathes, drill-presses, engines, &c.

CHICAGO SPRING BUTT COMPANY, Chicago, Ill., U. S. A.—Illustrated catalogue and price-list of spring butts and hardware specialties.

L. EMERY, Jr., & Co., Bradford, Pa., U. S. A.—Price-list and catalogue of oil and artesian well supplies.

WATERTOWN STEAM ENGINE COMPANY, Watertown, N. Y., U. S. A.—Illustrated and descriptive catalogues of stationary, portable and agricultural steam-engines.

THOMAS KANE & Co., Chicago, Ill., U. S. A.—Illustrated catalogue of boats and canoes.

BELDING MANUFACTURING COMPANY, Belding, Mich., U. S. A.—Illustrated catalogue of refrigerators.

F. WICHELHAUS, Newark, N. J., U. S. A.—Illustrated price-list of hardware, mechanics' tools and house-furnishing goods.

WILLIAM SELLERS & Co., Philadelphia, Pa., U. S. A.—Catalogue of machine tools, &c.

FAY & SCOTT, Dexter, Me., U. S. A.—Illustrated catalogue of machinists' tools.

W. W. OLIVER, Buffalo, N. Y., U. S. A.—Illustrated catalogue and price-list of jewelers' machinery, tools and supplies.



# AMERICAN MAIL

DEVOTED TO THE

Manufacturing and Producing Interests of the United States.

Published the First of Every Month,  
in one Edition, for all Countries.

NEW YORK, DECEMBER, 1887.

Subscription \$3.00 a Year, Postpaid.  
Single Copies, 25 Cents.

## American Spectacles and Eye-Glasses.

INCREASING USE OF SPECTACLES AND EYE-GLASSES—THE INVENTION OF SPECTACLES—DIFFERENT KINDS OF EYE-GLASSES, ETC.—THEIR CHARACTERISTICS—OPHTHALMOSCOPIC TEST.

NOTWITHSTANDING the great improvement in all classes of printed matter it appears that blindness has increased 30 per cent. between 1870 and 1880, and this is attributed for the most part to contagion and immigration. Ten minutes' observation in an optician's store is sufficient to establish the fact that defective eyesight is one of the weaknesses of human nature, and with it goes much that is vain and frivolous. An aged man leaning on his servant buys reluctantly a pair of glasses suited only to aged eyes, while the young lady who can see but little better assures the optician that she is buying for a friend, and she consults the mirror as to her appearance with more anxiety than she does the quality and suitability of the lenses she is buying.

For persons with troublesome noses on which it is difficult to fit glasses there is the adjustable nose-piece, which will fit almost any nose, while there are noses which absolutely refuse to be fitted with eye-glasses at any price, and are, therefore, condemned to wear spectacles. For those whose eyelashes are long and touch the glass there is the off-set nose-piece, which holds the glasses beyond the reach of those appendages. In the matter of all kinds and descriptions of optical instruments America has been steadily forging ahead, and to it to-day is due many of the most noteworthy improvements and inventions of the age. When and by whom spectacles were invented is not certainly known; there are evidences of their being used in Europe during the latter half of the thirteenth century, and Roger Bacon, who died in 1292, speaks of the advantages of a plano-convex glass to old men with weak eyes, and the invention of spectacles is somewhat doubtfully ascribed to Salvinus Armatus, a Florentine nobleman, who died in 1317.

With the invention of printing defective eyesight began to increase, and doubtless with such increase came the necessity for spectacles,

and, as in other matters, men began to turn their attention to such devices. At whatever time they first came into use, their improvement and development have been very gradual, and it is generally conceded, on the American continent at least, that the recent invention of the so-called diamond spectacles has been an immense stride in the direction of perfection.

These spectacles are the product of the fusion of minute crystal pebbles with such chemical elements as deprive them of their crystal-

line structure, and thus destroy their injurious and refractory character. The defects of the Brazilian and Scotch pebbles, or crown and flint glass, are easily seen by their tendency to polarize light, and to reflect the heated rays of the sun or any artificial light in whose presence they may be used.

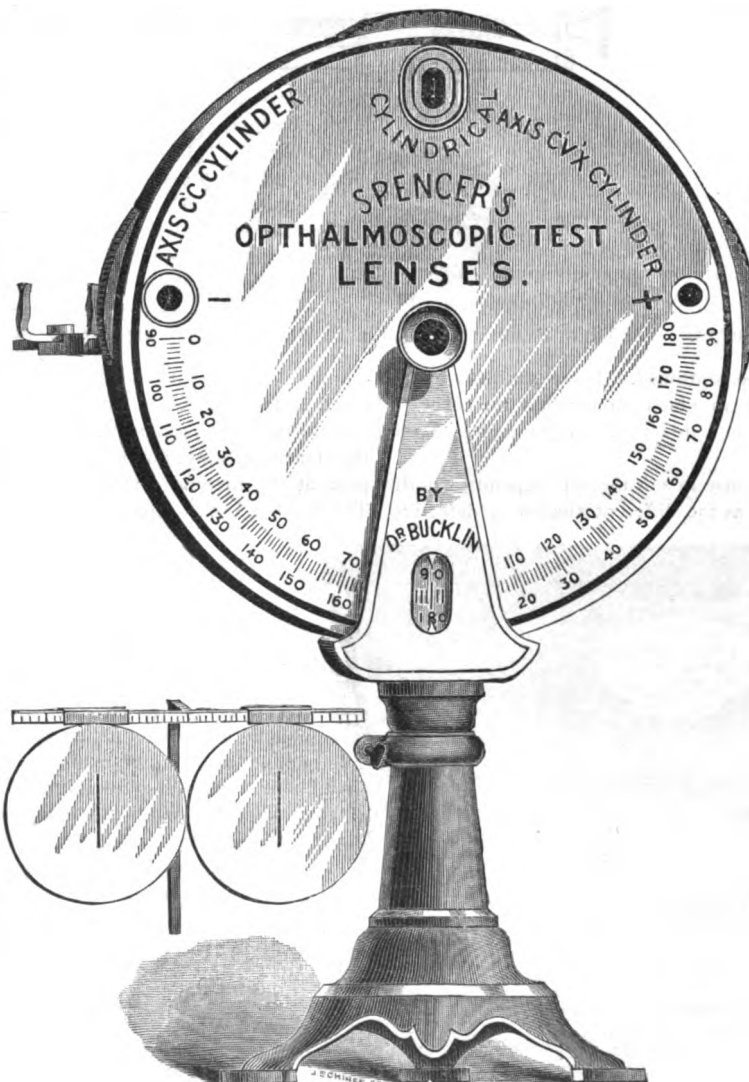
The American eye-glass or spectacle is so constructed that the core or centre of the lense comes directly in front of the eye, and this means that clear and distinct vision is produced, and all unpleasant sensations, such as glimmering and wavering of sight, are obviated. Prismatic colors and scattered rays are prevented, as the temperature of the glass is lower than that of the atmosphere, and the material when fused is found to be free from any extraneous substance which can in any way interfere with the sight. The hardness of glasses of this description is such that scratching is almost impossible.

In addition to these most important features the workmanship and ingenuity displayed are worthy of attention. The materials used are various, including the metals, shells, rubber and celluloid, and the excellent temper of the steel frames, and the beauty, the lightness, and elegance and accuracy of grinding of all styles of these glasses cannot be surpassed.

The ruby-tinted or delicate rose

tints which are so grateful to some eyes are most delicate, the color being so slight as not to tint the objects seen through them, and yet they neutralize the actinic and chemical rays of light and thus protect and rest the eye. In addition to these, smoke or sapphire lenses are to be had for the same purposes.

With the invention of celluloid a most important impetus was given to the optical trade in this country by reason of the beautiful frames which can be made from it at a reasonable cost. Tortoise-shell, jet



OPHTHALMOSCOPE, FOR TESTING LENSES.



and amber are some of the materials which are so faithfully imitated as to defy detection. Rubber magnifiers, both single, double and treble lenses, lorgnettes, engravers' loupes, watchmakers' glasses, reading-glasses, goggles and wire eye-protectors are also mounted in this useful and ornamental material.

Glasses are called double-convex when both sides are of an equal radius or section of a sphere; plano-convex when one side is plain

the instrument; these two points form the axis on which the instrument revolves and from which it receives its support. From the adjustable standard of the instruments there are two flat, pyramidal-shaped arms, in the apex of each of which is a hole just the necessary size to retain the two hollow hubs which support the main disk.

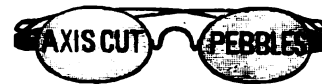
Within this disk are three other disks perforated at their margins with a series of half-inch holes, all equally distant from the centres of



CROSS EYES.



FOCOMETER.



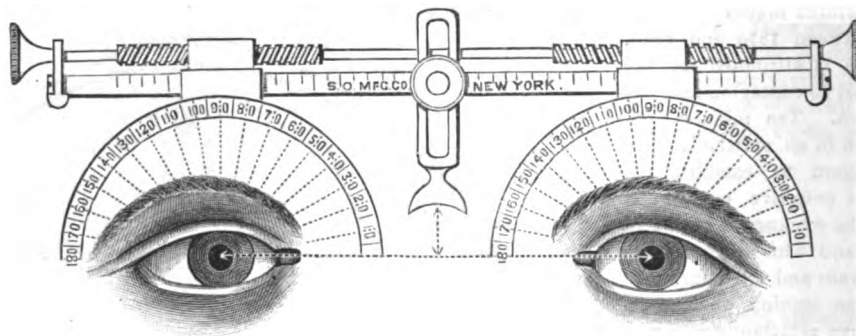
SPECTACLES.

and the other convex; periscopic-convex when they are concave on one side and convex on the other, and of such curves as would, if continued, cross each other, thus making the convex curve greater than the concave. The periscopic-concave is also concave on one side and convex on the other, but the curves are such that the lines would not

the disk and equally distant from each other. These are all so mounted on their axis that, while all of the marginal perforations rotate to a position exactly opposite the opening through the main disk, the outer rims of the disks project slightly beyond the main disk, so that they may be readily rotated in the simplest and most convenient



POLARISCOPE, FOR TESTING PEBBLES.

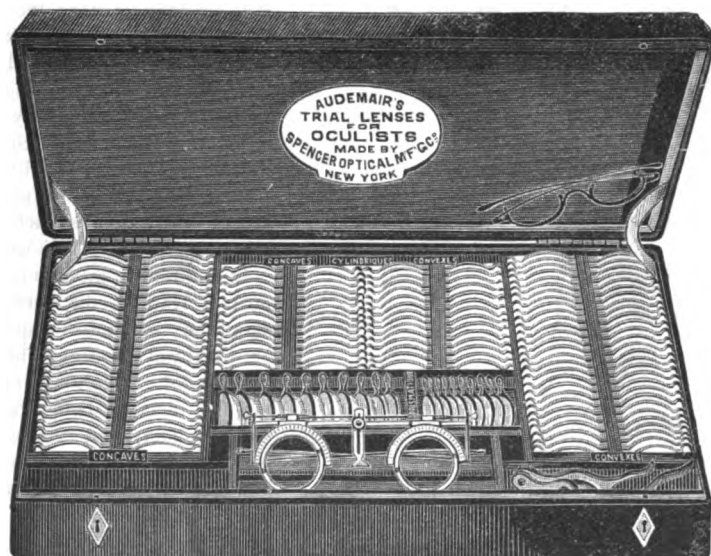


A TRIAL FRAME FOR MEASURING DISTANCE BETWEEN PUPILS AND HEIGHT OF CREST OF NOSE.

meet no matter how far they were continued. There are also cylindrical lenses of all foci, and others in which one face has the curve of a cylinder and gives power only in a direction at right angles to the axis.

In the selection of the correct lense to suit the eye depends wholly the usefulness of the glass, and as the different shades of defective

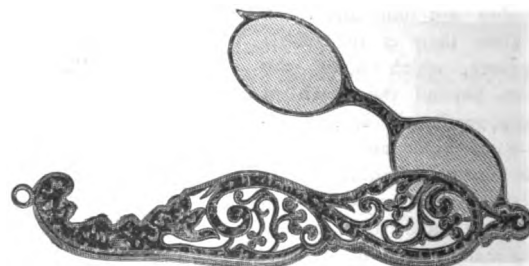
manner. The right disk contains twenty-nine convex lenses, indicated by the sign X, and one blank opening, and by rotating this disk in a downward direction the convex lenses will appear in rotation at the central opening, and as each lense appears the number will appear at the opening on the face of the instrument and marked X. The left-hand disk contains the same number of lenses, and by



A COMPLETE SET OF TRIAL LENSES.



PATENT EYE-GLASSES.



LORNETTE.

eyesight are almost as numerous as the diseases of the body it is eminently necessary, if the purchaser would be satisfied, that the glasses and the eye should be matched and suited under all circumstances, otherwise more damage than good will accrue.

To meet this necessity there is an instrument known as the ophthalmoscope test, which consists of a hollow disk twelve inches in diameter and three-quarters of an inch thick. From the centre of each side of the disk there is a hollow hub, forming an eye-piece on the face of

moving them also from above downward the number of each lense will appear in rotation, the number being indicated in the opening in the face by the sign —. By the various motions the different lenses are made to appear in their turn at the central opening, where and by which means the natural and various defects of the eye may be measured more rapidly and accurately than by any other known method. This is said to be the only instrument which, in addition to measuring the optical defect of the eye, measures instantly and in a satisfactory



manner the exact distance between the pupils, while at the same time it determines any weakness in the muscles which move the eyes. It also has an attachment which corrects astigmatism.

The cases, whether of metal, leather or any other material, are extremely well finished, and they are made both closed and open mouthed in fancy enamel, decorated in several colors, such as Scotch plaid, in planished tin, nickel-plate, solid silver or engraved gold-plate.

It may be confidently asserted that, as the sight is the most important of our senses, any invention or manufacture which shall develop anything which materially assists and preserves that wonderful faculty must be classed among the benefactions of the human race; and the advancement and extent of the knowledge which has been shown in this important branch of the arts is to a large extent owing to the researches, discoveries and improvements which have been made in this important manufacture. Thanks are due to the Spencer Optical Company for illustrations.

### Other Phonographs than Edison's.

**A**N article in the last issue of this journal on the subject of "The Perfected Phonograph" chronicles the return of Mr. Edison to renewed effort in an old field. The phonograph, as invented by him in 1877 and improved in 1879, was a mechanical curiosity, illustrating, in an interesting way, some principles in the law of acoustics, but utterly worthless for other purposes. Mr. Tainter, a Washington mechanic and electrical expert, conceived that the phonograph could be developed into a serviceable automatic amanuensis if only its motive and recording functions could be improved. This improvement he effected at a cost of about \$5,000, contributed by some speculative men at the capital, who were on the lookout for a good thing. He reduced the size and weight of the machine to reasonable limits; imparted an ingenious traveling action to the recording cylinder, and for Mr. Edison's unsatisfactory surface of tinfoil, to be indented by a round-pointed stylus, he substituted a paraffine surface upon which a sharp stylus should chisel a record of the sounds sent through the speaking-tube. The motor for the instrument could be electric, gas, hot air, hand-crank or treadle.

A practicable machine being produced and a patent secured on the few elements that were patentable, the speculative owners organized a promoting scheme, which took amazingly and netted them a great many thousands of dollars. The story of the graphophone craze at Washington, if fully told, would rival at a distance the tales associated with the names of John Law and George Hudson. The machine has not come into use, and the report that Mr. Edison was in the field with still another improvement in phonographic instruments gave the finishing stroke to the already flaccid speculation in graphophone shares. No person should invest in patented articles, or in shares of companies formed to introduce patented articles, without well knowing what they are about. There never was a time, probably, when \$25,000 would not have been a full price for all right and title to the graphophone, but several times that sum has been paid for a very limited and unproductive interest in it. Even the roseate stories told of the perfected phonograph of Mr. Edison, for the production of which in merchantable quantities forty workmen are said to be fabricating the tools, should be received with great caution. The instrument, however nearly perfect, can only come into use gradually, and the original patent will have expired before the world has altered its habits of correspondence.

Mr. Berliner, an electrician of Washington, says that Edison and Tainter are both wrong, since by putting their stylus at right angles to the recording surface they invite a frictional resistance to the weak impact of the diaphragm, vibrated only by the sound waves created by the voice, and that, as this resistance is greatest when the vibrative force is greatest, the modifications of the recorded sounds are unequal, and a true and satisfactory reproduction of the voice is impossible. He uses a blunt stylus, the end of which rests lightly, at an excessively acute angle, upon a surface of lampblack, and as the diaphragm vibrates under the voice the stylus makes a wavy line along the carbon surface, which is fixed by a varnish coat and afterward reproduced for permanent use by electrolytyping, photo-engraving or other suitable means. He practically gets rid of friction and the faithful reproduction of the sounds uttered is said to be assured.

## Government Intelligence.

### Executive and Departmental.

MEETING OF CONGRESS—THE PRESIDENT'S MESSAGE—FREE TRADE AN ADMINISTRATION ISSUE—OUR FOREIGN COMMERCE—REVENUES—INCREASE AND DECREASE IN DUTIES—MR. CHAMBERLAIN AND THE FISHERY QUESTION—THE POINTS OF DIFFERENCE BETWEEN CANADA AND THE UNITED STATES—MEETING OF THE JOINT COMMISSION—REPORTS AS TO THE RESULTS OF NEGOTIATIONS—MR. CHAMBERLAIN AND THE "FAIR TRADE" POLICY—INTERNAL REVENUE COLLECTIONS—TRADE MOVEMENT—IMMIGRATION—DIPLOMATIC APPOINTMENTS—THE NICARAGUA CANAL—OUR NAVY.

**C**ONGRESS is in session and the annual Message of the President has been laid before it. To the free-traders this document is a great boon, committing not only the Chief Executive but the party to which he owes his elevation to office to free trade, or to tariff reduction on a scale which practically amounts to the same thing. This is the whole burden of the Message and nothing is said about our foreign relations, nor is any information or suggestion given as to important matters relating to domestic affairs. The tariff and incidentally the Treasury surplus constitute the sum total of this Presidential exegesis, which presents nothing new in argument and is a collocation of free-trade "chestnuts;" that is to say, a serving up of stale arguments and one-sided assertions, which have been vamped and revamped time and time again.

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At the same time it must be admitted that the President has taken a bold step, quite at variance with the usual temporizing methods of politicians, and has made the issue so distinctively partisan that he has put himself at the head of his party as its supreme director. His political opponents profess to be rejoiced at his action, and both in and out of Congress there can be heard nothing but commendation on the one side and defiant congratulation on the other.

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Were it not for the department reports the country would be much at a loss to determine its position both as regards foreign and domestic affairs. Certain matters of moment are also so well covered by the press that the public has been kept informed of what is going on.

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The annual report of the Secretary of the Treasury gives in condensed form the operations of our foreign trade during the fiscal year ended June 30. From this the appended figures are abstracted.

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The values of our imports from and exports to foreign countries during the year ended June 30, 1887, as compared with the preceding fiscal year, were as follows:

MERCHANDISE.			
	1886.		1887.
Exports—			
Domestic.....	\$665,064,529		\$703,022,923
Foreign.....	13,560,301		13,160,288
Totals.....	\$678,624,830		\$716,183,211
Imports.....	635,436,136		692,319,768
Excess of exports.....	\$44,088,694		\$23,863,343
SPECIE.			
	1886.		1887.
Exports.....	\$72,463,410		\$35,997,691
Imports.....	38,593,656		60,170,792
Excess of exports.....	\$33,869,754		.....
Excess of imports.....	.....		\$24,173,101

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The total value of the imports and exports of the last fiscal year, when compared with that of the fiscal year 1886, shows an increase of \$93,542,013.

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The value of our exports of domestic merchandise during the last fiscal year exceeded that of 1886 by \$37,058,394. The following are the articles of domestic product or manufacture the exports of which have materially increased during the last fiscal year:

Wheat.....	\$40,458,766
Wheat flour.....	13,597,127
Pork and wheat products, except beef products.....	6,185,297
Leather and manufactures of.....	1,608,456
Furs and fur skins.....	1,406,175
Cotton, unmanufactured.....	1,136,415



The following are the articles of domestic product or manufacture the exports of which have decreased during the last fiscal year:

Corn.....	\$12,383,561
Mineral oils.....	3,374,929
Beef products.....	2,988,053
Spirits, distilled.....	1,944,411
Oats.....	1,765,138
Hops.....	1,659,518
Copper ore.....	1,374,055
Tobacco, and manufactures of.....	1,194,736
Firearms.....	1,114,407
Dairy products.....	1,039,164

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The total value of the imports of merchandise increased from \$635,-436,136 in 1886 to \$692,319,768 in 1887, being an increase of \$56,-883,632, or 9 per cent., of which \$22,061,831 represents the increase in the value of free merchandise and \$34,821,797 the increase in the value of dutiable merchandise.

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The amounts of revenue collected on dutiable merchandise entered for consumption from specific rates of duty and ad valorem rates of duty, respectively, during the fiscal years ended June 30, 1883 (the year prior to those affected by the Tariff act of March 3, 1883, except with respect to sugar), 1886 and 1887 have been as follows:

	1883.	1886.	1887.
Value of dutiable merchandise.....	\$493,916,384	\$413,778,055	\$450,325,322
Ordinary duty collected.....	200,650,699	188,533,171	212,031,424
Collected under specific rates, per cent.....	56.0	60.5	61.3
Collected under ad valorem rates, per cent.....	44.0	39.5	38.7

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At a reception to newspaper correspondents Mr. Chamberlain, the British Commissioner, suggested that the result of the commission's deliberations would be a new treaty. This indicates that he takes the same view of the situation as Secretary Bayard has heretofore held. The annoyances to the fishing vessels of the United States on the Canadian coast from the Dominion police boats have arisen out of a strained and vexatious construction of the treaty of 1818. Other treaties have been made and terminated since that treaty was ratified, and after each return to the convention of 1818 the old troubles have arisen. The Canadians have asserted their right to protect their in-shore fisheries. The United States fishermen, by whom the inshore fisheries have ceased to be regarded as worth contending for, have clamored for an assertion by the United States of unrestricted commercial privileges, the right of fishermen to enter all Canadian ports for all purposes except to take, buy or cure fish, these three privileges being forbidden by the treaty of 1818.

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So precise have the Canadians been in interpreting the treaty phraseology that they have construed the permission to enter the harbors of Canada "for the purpose of shelter and of repairing damages therein, of purchasing wood and obtaining water, and for no other purpose whatever," to mean that American fishermen cannot buy bait or ice or enjoy privileges accorded to all vessels except fishing vessels. So Mr. Bayard and his associates, in stating the objects sought to be attained by the American Commissioners, refer to the article of the treaty of 1818, under which all the differences have arisen, and will propose a remedy. He will ask that lines shall be agreed upon separating the exclusive from the common right of fishing on the British North American coast. To settle the headland controversy he will ask that it shall be agreed that hereafter the bays and harbors from which American fishermen are to be excluded, except for entrance to ports, are to be bays and harbors which are ten or less miles in width, the distance of three marine miles from such bays to be measured from a straight line to be drawn across the bay at the point nearest the entrance, and at the first point where the width does not exceed ten miles. An effort will be made to secure an agreement upon regulations to govern the entrance of United States fishermen to bays and harbors for shelter, repairs, purchasing of wood and obtaining water, to establish penalties for infringement of the regulations and for the speedy trial of offenders.

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As a means of carrying out the provisions of such a treaty it will be proposed that Great Britain and the United States shall each keep a national vessel cruising in the Gulf of St. Lawrence. When a vessel of either nation is seized for violation of the treaty the commanding

officers of the two national vessels shall inquire into the charge. If they agree that there has been no violation of treaty the vessel shall be released. If it is their opinion that the vessel should be subject to a judicial examination it is to be taken into Halifax and the case heard in the Vice-Admiralty Court. In case of a difference of opinion as to the culpability of the seized vessel an umpire or third person, chosen by lot, is to decide whether it is to be brought to trial. A very important point that the United States Commissioners will ask to have declared in the treaty will be that the fishing vessels of the United States shall have the same commercial privileges in Canadian ports as other vessels of the United States, including the purchase of bait and other supplies, subject to regulations prescribed for other than fishing vessels.

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So long as Mr. Chamberlain feels obliged to maintain silence as to the extent to which these expectations of Secretary Bayard are to be conceded, or what part of them is to be rejected, just so long will the outcome of the commission remain a matter of doubt. One remark made by Mr. Chamberlain in referring to the proposition for a commercial treaty has not been repeated. It seemed to him that "the favored nation" clause might stand in the way of an arrangement of that sort, for the empire has treaties with several countries that would have to be borne in mind in entering into a commercial union with the United States.

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The joint commission met on November 29 to hold its second formal conference, and all of the members were present. The English representatives brought with them a number of official documents. Among the publications on the subject of the fisheries that have recently come into the possession of the American negotiators is the Canadian book of dispatches containing correspondence between the Canadian and English governments, which was to a certain extent unknown to the Department of State, and is expected to prove of value in the pending negotiations.

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Since then there have been conflicting reports as to the probable outcome of the negotiations. A member of the Senate remarked that he had obtained an impression that the joint commission will agree to a treaty, perhaps with provision for a bounty to American fishermen. He did not express confidence as to the result if such a treaty should reach the Senate, nor was he ready to say that he thought there was a prospect that the House would agree to the necessary legislation to carry such a treaty into effect, should one be made.

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Another report, which is said to have originated with the British Commissioners, or some of their attachés, is to the effect that the commission has virtually abandoned all hope of reaching an agreement and that the most which can be expected is that the Commissioners will recommend to their respective governments that an interpretation of the treaty of 1818 which shall be satisfactory both to Great Britain and the United States shall be ratified by means of a board of arbitration. If this be true of course the Secretary of State and the President will be left precisely where they were two years ago, when a reference to arbitration of the fishery controversy was recommended to Congress.

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It is reported also, and the report is very generally credited in Washington, that Secretary Bayard has become discouraged and has virtually left the negotiations, so far as the United States is concerned, in the hands of Commissioner Angell.

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Mr. Chamberlain and his associates are still in Washington and there is no indication of their early departure. Mr. Chamberlain was asked whether he would like to say anything about the President's Message, and frankly admitted that he might "like" to say something about it, but that the relation in which he found himself suggested the impropriety of comment. It would be as unbecoming for him publicly to pass upon the Message as it would for Minister West to do anything of that kind. He would say, however, that it was the Message of a strong man, and that it was not likely to expose its writer to the charge of being ambiguous or anxious to be misinter-



puted. While he would not venture to express an opinion of the Message itself as affecting this country, he would say that in England he had no doubt it would have an appreciable effect. The "fair trade" or protection party there is a conservative party. It has taken up the fair-trade cry for a purpose, not that it can ever expect to win upon it, for he believed that with fair trade as an issue the party would be beaten. But in closely contested places fair trade was advocated in the hope of carrying them. The Liberal Unionists are against it. In so far as the President's Message may be discouraging to the fair-trade party, it will affect them in their opposition to the policy of the Liberal Unionists in the treatment of the Irish question.

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The collections of internal revenue during the first four months of the present fiscal year were \$41,621,210, an increase of \$3,135,770 as compared with the collections during the corresponding period of last year. There was an increase of \$1,446,907 on spirits; an increase of \$953,869 on tobacco; an increase of \$596,531 on fermented liquors; an increase of \$211,811 on oleomargarine, and an increase of \$332 on banks, bankers, &c. The only decrease was \$73,681 on miscellaneous objects. The receipts for October were \$674,608 greater than for the same month of last year.

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The revenue of the government from all sources during November amounted to about \$30,500,000, being an average of a little more than \$1,000,000 a day. The disbursements during the month were unusually heavy, and nearly equaled the receipts. Over \$18,000,000 was paid out on account of pensions. It is estimated at the Treasury Department that there has been an increase of nearly \$1,000,000 in the public debt during November.

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The report of the Bureau of Statistics for the fourth month of the fiscal year is interesting, as showing increased exports and imports of merchandise and a greatly increased importation of gold. For the year ending October 31 the exports of merchandise were \$724,625,735, as compared with \$697,021,848 for the corresponding period in the preceding year, an increase in exports of \$27,604,087. The imports for the same period were \$51,188,882 in excess of those of the preceding year. The exportations of gold were \$33,802,168 less than those for the twelve months ending October 31, 1887, and the imports of gold were \$31,039,056 greater. The silver imports were greater by \$513,910, and the exports exceeded those of the preceding year by \$1,129,763. The excess of imports of gold and silver over exports was \$43,171,611, while during the year preceding the excess of imports over exports was \$22,285,960.

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The population of the United States was increased during the ten months ending October 31 by 454,699 immigrants, 98,180 of whom came from Germany, 23,908 from England and Wales, 68,326 from Ireland, 64,197 from Sweden and Norway, 40,768 from Italy, 21,074 from Russia, and 19,520 from Scotland. These figures show an increase in the emigration from the countries named, but there was a decrease in the number of immigrants from France, Bohemia and Hungary.

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The President has sent the following nominations to the Senate: To be Envoy Extraordinary and Minister Plenipotentiary of the United States—Oscar S. Straus, of New York, to Turkey; Alexander R. Lawton, of Georgia, to Austria-Hungary; Bayless W. Hanna, of Indiana, to the Argentine Republic. To be Minister Resident and Consul-General of the United States—S. S. Carlisle, of Louisiana, to Bolivia. To be Consul-General of the United States—Jared Lawrence Rathbone, of California, at Paris; Charlton H. Way, of Georgia, at St. Petersburg; D. Lynch Pringle, of South Carolina, at Constantinople; Harold Marsh Sewell, of Maine, at Apla. To be Secretary of Legation and Consul-General of the United States—John G. Walker, of Texas, at Bogota; James R. Hoemer, of New York, at Guatemala.

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The engineer corps designated by the Nicaragua Canal Construction Company to survey the proposed canal route will be divided into seven parties—five land surveying, one hydrographic and one boring

party. Civil Engineer R. E. Peary, of the navy, will have immediate supervision of the work in Nicaragua. The personnel is as follows: Chiefs of Parties—J. Francis Lebaron, Jacksonville, Fla.; Domingo Garcia Cartaya, city of Mexico; Frank P. Davis, Washington, D. C.; J. W. Pethard, St. Louis; Lieut. W. J. Maxwell, United States Navy; Peter Kalb, Hoboken, N. J. First Assistant Engineers or Transmitters—W. V. Alford, Garrettsville, Ohio; J. G. Holcombe, Washington; F. T. Bernhard, New York; H. C. Miller, Louisville, Ky.; P. H. Bevier, New York; MacDonough Craven, Boston. Second Assistant Engineers or Levelers—Ricardo Molina, Havana, Cuba; J. S. Ford, New York; H. C. Litchfield, Jacksonville, Fla.; Calixto Guiteras, Philadelphia; A. G. Menocal, Washington; E. W. Hunt, Wisconsin. Rodmen—Emil Diebitsch, William McCawley and Perry Fuller, of Washington; Enrique Cole, Mauagua, Nicaragua; Paul Spicer, Winchester, Mass.; Paul B. Cooke and P. V. R. Van Wyck. Chainmen—Louis William Mohuan, D. D. Stratton, John M. Murphy, R. J. Wilson, Henry W. Johnson, of Washington; Daniel MacAuley, of New York. Clerks—Jacob Crowninshield, of New York, and Charles E. Kern, of Washington. There will be a number of draughtsmen and a medical staff of several experienced doctors.

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Civil Engineer A. G. Menocal, United States Navy, chief engineer of the Canal Construction Company, has issued instructions to Civil Engineer Peary, his principal assistant, who will have immediate charge of the survey in the field until Mr. Menocal goes to Nicaragua, which he will do during the coming winter. This review of the work to be done is, perhaps, the most clear and concise statement of just where and how the route will be situated that has yet been made. Much of the detail of the work is left to Mr. Peary's engineering skill, and he is not bound closely to a particular line of action, as it would be impossible to foresee and provide for various contingencies that may arise during the prosecution of the work.

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"Of the various plans suggested," says Mr. Menocal, "the company has decided to re-examine two, in which the canal, from the port of Brito, on the Pacific, to Lake Nicaragua, the navigation across the lake, and slack-water navigation in the River San Juan as far as Ochoa, are common to both, the difference between them being confined to that portion of the routes from the dam across the San Juan River at Ochoa to Greytown. One plan contemplates following the general direction of the River San Juan from the dam to the vicinity of Punta Petaca, just above the outlet of the San Juanillo, and thence, by an almost straight line, to Greytown. This line will be designated as the lower route, and is essentially the same as laid down in the surveys of 1872-3 by the United States surveying expedition. The other involves the same dam at Ochoa, and by retaining an uninterrupted level through some three miles of the canal and across the basin of the stream San Francisco, which it is proposed to flood and convert into an artificial lake by the construction of an embankment just before it empties into the San Juan, the summit level is extended to the eastern slope of the dividing ridge between the basin of the San Francisco and the valley of the lower San Juan, a distance of 144 miles from the upper lock on the west side of the lake. A lock of 53 feet lift has been proposed at the eastern terminus of the summit level, and thence to Greytown, a distance of seventeen miles, the canal follows, first, the valley of the brook Deseado to Laguna Benard, and then across the flat alluvial plain of the San Juan River to Greytown. This line, which will be called the upper route, is some eleven miles shorter than the lower route, and the company has decided that it shall receive immediate attention, leaving the detailed relocation of the lower route for the work of an additional engineering force, which will follow later on, or for the final operations of the expedition about to sail under your immediate charge."

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After some suggestions as to the organization of the force he continues: "The restoration of the harbor of Greytown is one of the most important engineering problems connected with the construction of the canal, and should receive the most attentive consideration from the start. On landing at Greytown you should put the hydrographic party at work with as little delay as possible. It is desirable to make



an accurate survey of the harbor, showing the inner basin, the outlets, the River San Juan below its confluence with the San Juanillo, and the coast line from Harbor Head to the northern limit of the sand-accumulating area on the west coast between Greytown and the Rio Indio. Information heretofore obtained shows conclusively that the formation of the sand bank closing the harbor was due to the transportation of sand along the coast from east to west by the action of the waves striking the beach at an angle, and that after the closing of the harbor entrance the sand continues to be carried by the same propelling force past the old entrance, to be deposited along the west coast and as far north as the general inclination of the beach continues to form an angle with the prevailing direction of the waves. This conclusion has been accepted as the fundamental principle on which the proposed plan for the restoration of the harbor rests, and no effort should be spared either to prove or disprove it."

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The annual report of the Secretary of the Navy says that many difficulties stood in the way of a creation of a creditable new navy at the beginning of the year; that many of these have been removed, and that the government now has in course of construction establishments for steel forgings for the heavier guns, armor for iron-clad vessels and for the secondary batteries, machine and rapid-firing guns. He says it was a fatal mistake for this country to be dependent on any other nation for its implements of war. The Secretary then alludes to the delay of Congress in appropriating the \$35,000,000 contemplated in the committee reports, to the final appropriation of \$4,000,000, to the advertisements issued by the department for bids for armor for steel gunships of American manufacture, and the government's contract with the Bethlehem Iron Company, under which a plant for the production of armor and gun steel is being erected at Bethlehem, Pa., second to none in the world, it is believed.

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This policy was also pursued in the matter of secondary batteries, and with a like result, he says. The department declined to make any purchase of the Hotchkiss arms, previously adopted for our secondary batteries, except upon condition that a manufactory was established in this country, and, by the accumulation of orders, the inducement became in time sufficient to secure the desired result, and the Hotchkiss Company has ascertained that with the superior tools in use in this country in the manufacture of arms the secondary batteries of ships can be made here and sold at prices less than we have paid for their foreign-made arms, and as low as they are produced there for any foreign government. And such are the prices made to this country by the company.

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In like manner the contracts for armor and gun steel are made at prices within 25 per cent. of the European price for the similar article, not greater than the difference in labor between the two countries, notwithstanding the heavy outlay for plant (estimated at \$2,500,000) necessary to be made to undertake the contract. Some slight delay in construction of the cruisers under contract resulted, together with much jarring and unpleasantness; but at the present time all concur that the quality of the steel has been improved, and that more reliable processes have come to light and all dissatisfaction has disappeared. Especially has the steel made upon the Pacific Coast been notable for its quality, and the construction of the cruisers there, the Secretary thinks, may mark an important event in its industrial history.

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The Secretary says that public feeling seems to call for the creation of a naval reserve. Committees of the Chambers of Commerce of New York and San Francisco have passed resolutions urging the organization of such a force as a means of providing for defense. Meetings have been held in cities of the South indorsing the formation of such a national organization. It should resemble in organization that of the militia or national guard, rest upon the foundation of local interest, contemplate the employment and rapid mobilization of steamers enrolled on an auxiliary navy list, and be calculated to produce the best results upon a comparatively national expenditure.

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The Navy Department is considering the feasibility of constructing

a vessel in accordance with the plans of Sir Charles Reed, which call for a 7,000-ton high freeboard turret ship, with vertical inverted cylinder triple expansion engines. Before the recent competition for the 6,000-ton vessels Sir Charles Reed was invited to submit plans. He declined to enter into competition for the \$15,000, but volunteered to furnish designs for two vessels of the same type—one of 6,300 tons and the other of 7,000 tons displacement, charging nothing therefor except the actual cost of their preparation. The offer was gratefully accepted by the Secretary of the Navy, who now has before him the promised plans. The bureau chiefs have examined the plans and are greatly pleased with them. It is probable that an effort will be made to construct a vessel on the 7,000-ton plans. Sir Charles Reed was formerly Director of Construction for the British Navy, but resigned on account of a difference with the Admiralty. The trouble grew out of a set of plans submitted to the Admiralty by Captain Coles, of the British Navy. Sir Charles said that the vessel built in accordance with Captain Coles' plans would not float. The Admiralty insisted that a vessel be constructed upon the plans of Captain Coles. Sooner than countenance such an act Sir Charles resigned his office. The government subsequently recognized his services by a gift of \$50,000. Captain Coles' vessel when constructed capsized, and about 400 men were drowned.

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The Navy Department is somewhat troubled just at present about the construction of the 6,000-ton vessels at government navy yards. In the opinion of some naval officers the government has a white elephant on its hands, and will eventually be obliged to call on the contractors to help complete the vessels. The orders were issued some time ago to begin the construction of the Barrow ship at the Norfolk Navy Yard. Assistant Naval Constructor Bowles, who designed the Atlanta, was detailed to superintend the work. At the eleventh hour it was discovered that there was not a man in the yard capable of handling so great a job. The master workmen were not even able to lay out her keel. The first step could not be taken. The men were willing, but they lacked the experience. The department discovered that immediate steps would have to be taken to provide the necessary experience successfully to prosecute the great work before them. It was decided to send several of the master workmen to Cramp & Sons' shipyard for instructions. In the meantime Mr. Bowles will go to England to supervise the working plans for the vessel.

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The Ordnance Bureau, at the Washington gun factory, is constructing four 10-inch breech-loading high-power guns for the now nearly completed monitor Miantonomah, at the Brooklyn Navy Yard, and ten 6-inch breech-loading steel rifles for general service. There is besides a large amount of work going on in the fitting up of tubes, hoops, breech mechanism, shot and shell, and fuses for all calibres and classes of guns. Four turret mounts for the Miantonomah are nearly completed, as well as four 8-inch half-turret central-pivot carriages. There are also ten central-pivot carriages for 6-inch guns approaching completion.

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Rear-Admiral Kimberly, commanding the Pacific Squadron, under date of November 1 reports the movements of the vessels of the squadron. The Vandalia, Mohican, and Juniata were at Honolulu when last heard from; the Alert was at Paita, bound for Panama; the Iroquois is under orders to visit Sufragio and Topolobampo on her way to Mare Island Navy Yard; the Adams sailed October 2 for the Tonga Islands; the Monongahela is at Coquimbo, Chili.

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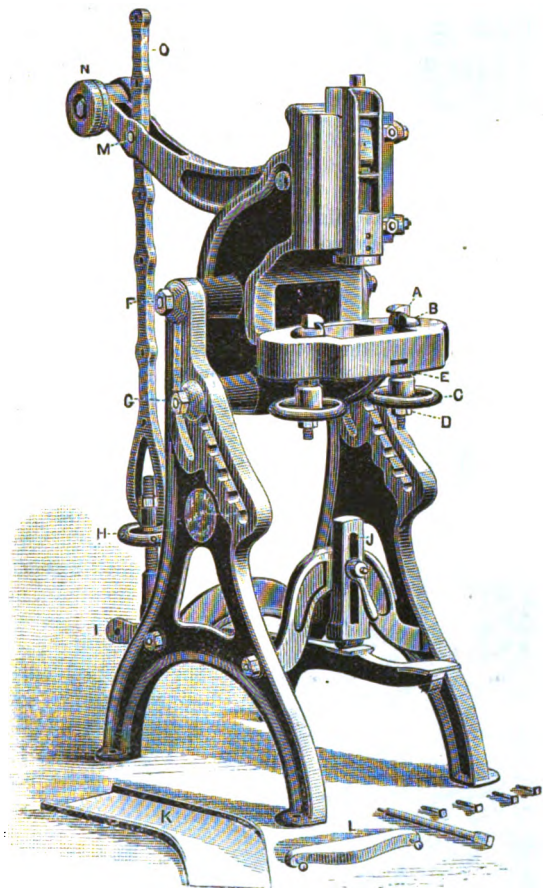
Rear-Admiral James A. Greer, commanding the European station, reports from Constantinople, November 8, that on the 6th he shifted his flag to the Quinnebaug for the purpose of visiting Constantinople. He arrived there on the morning of the 8th, and in the afternoon received a naval aide-de-camp of the Sultan, who called by direction of his Majesty. Admiral Greer, together with his staff, paid a visit to the United States Minister, the Minister of Marine and the Port Admiral. He expected to return with the Quinnebaug to Smyrna about November 16, when he would again hoist his flag on board the Pensacola.



## Engineering and Machinery.

### New Presses for Light Work.

ONE of the illustrations on this page shows a foot-press manufactured by the Ferracute Machine Company, and which is specially adapted for the manufacture of cans for condensed milk, oysters, lobsters, meats, vegetables and fruits. It is suitable for all sizes up to and including one gallon; it is also adapted to the manufacture of all sorts of paint, spice and varnish cans, and small cut tinware. This machine will cut thin brass, copper and sheet iron up to  $6\frac{1}{2}$  inches in diameter; it is solid and heavy in all its parts, and is amply strong for the uses mentioned, and yet runs easily on lighter work. Among the new features are the legs, which are built so that the frame can be set at any desired angle in a moment's

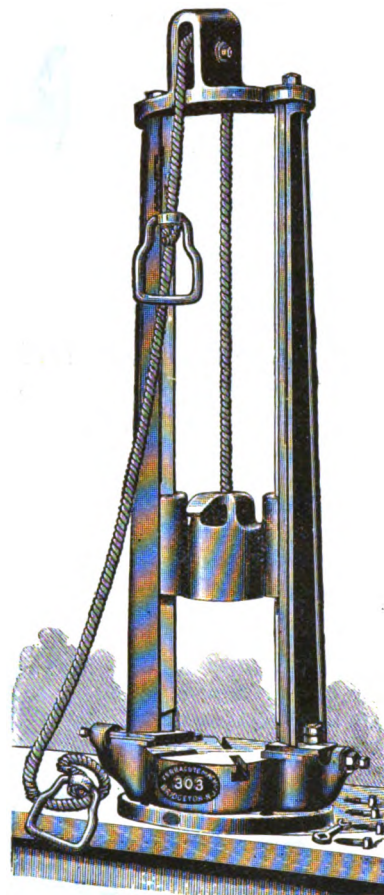


FOOT-PRESS FOR METAL WORK.

time and without altering the height. The frame and moving parts have been proportioned with reference to putting the metal where it is most needed. To change the press from an upright to an inclined position it is only necessary to remove the leg nuts, F, G, take out the bolt M, and lower the frame, with the studs at G resting in any notch desired; then tighten nuts and put the bolt M in a hole lower down. The mere changing of a foot-press from an upright to an inclined position is not a novelty, as the Ferracute Company some years ago introduced a press of this character, which was either the pioneer of its kind or among the pioneers. The inclination was then obtained by a removal of the legs and placing them in a new position. This was troublesome, and there was the additional disadvantage that the front of the bed was much higher than when it was horizontal. In the press illustrated, the front of the bed is kept at the same level in either position. This is accomplished by the peculiar form of the slots in the legs. This ability to maintain the bed at a uniform level is a decided advantage to the operator. Some of the other improvements are the swivel-pitman H, the adjustable treadle-stop J with rubber bumpers, and the adjustable differential die clamps A, D, which enables the operator to set dies easily and securely, and to produce more work than on old styles of presses, with less wear on

the dies. These clamps can be worked very rapidly, and at the same time the die is held with surprising force. No wrench is necessary, as the hand-wheel C controls the clamp, loosening it or drawing it down tightly. The extreme height of the press is 5 feet; weight, 540 pounds; size of hole in bed,  $6\frac{1}{2}$  inches square; distance back from centre of slide-bar to frame, 6 inches, and height from bed up to slide-bar,  $5\frac{1}{2}$  inches. All of the parts are fitted upon the duplicate system, in "steam-engine" style, durability and smoothness of working being secured by scraped surfaces, turned bolts, true bored holes, case-hardened nuts and screws, &c.

The other engraving illustrates an improved hand drop-press, another product of the Ferracute Machine Company. This press is arranged to fasten on an ordinary work-bench and is intended for stamping the lettering, beads, &c., on articles such as blacking-box and canister covers which have been drawn or formed to shape in



HAND DROP-PRESS.

another press. It can also be used in forming up small work in tin, brass, silver, &c, where a sudden blow will best produce the shapes required. It is complete with pulley and rope, is provided with two stirrups, so that it can be used by hand or foot, and the slides are adjustable to allow for wear. The hammer can be held up off the work by a projecting hook which engages with the upper stirrup. The extreme height from bench to top is 42 inches; length of slide-posts, 37 inches; distance between slide-posts,  $8\frac{1}{4}$  inches; weight of hammer, 50 pounds. The total weight of the press is 250 pounds.

For prices and other particulars on above machines readers are referred to the manufacturer.

### Drill Guide, &c.

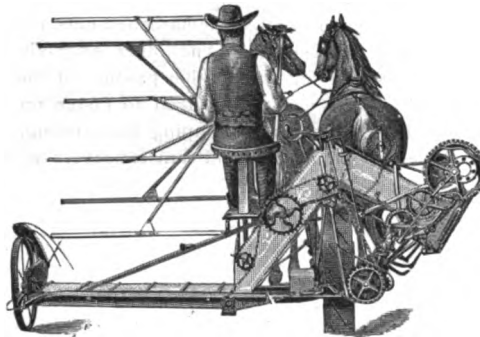
A NEW drill-guide and steady rest is made to be held in a tool-post the same as an ordinary tool. It is furnished with three plates, having holes to fit twist drills from  $\frac{1}{4}$  inch to 1 inch varying by  $\frac{1}{16}$  inch. A plunger-bolt is provided, which engages blind holes in the plates, by means of which any guide hole can be at once brought fair with the centre, after any one of them is properly adjusted. This will drill holes in the centre of work more easily than by ordinary methods and with greater certainty of good results.



### The Massey Harvesting Machinery.

THE Massey Manufacturing Company holds the enviable position of being the most extensive manufacturer of agricultural implements in the Dominion of Canada, and its immense business, combined with the high excellence of the machines produced, has given it a position in the front rank of the leading manufacturers of harvesting machinery in the world. It is also the pioneer factory of its kind in Canada, being over forty years established; and each succeeding year sees such a constantly increasing demand for and output of machines, and consequent extension of business, that the premises of this mammoth concern are being continually enlarged and improved, the superficial areas now covered by the buildings aggregating seven acres.

The business of this company has not been by any means confined to Canada. Its machines have a world-wide reputation, and are in use in nearly all the civilized countries of the world. The company has established a branch in London, England, from where all of its European business is conducted; and it has representatives in South America and Australia, where its machines are being extensively sold. It has received the patronage of many of the representative agriculturists of Great Britain, including His Grace the Duke of Northumberland, the Most Honorable the Marquis of Lorne, late Governor-General of Canada; His Excellency the Marquis of Lansdowne, Governor-General of Canada; Earl Grey, Lord de Freyne, and others. Lord Lansdowne, during his recent visit to Toronto, visited the works and expressed his surprise and gratification at the size and splendid



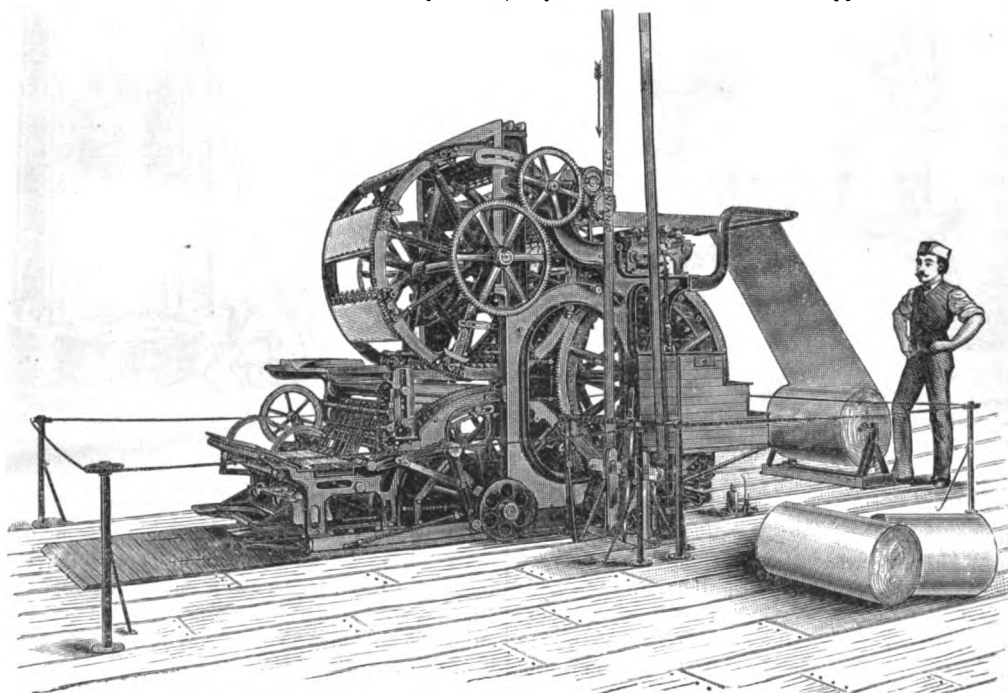
TORONTO LIGHT BINDER, NO. 4.

necessary formerly. Some of the recent improvements added to this machine are the Massey expansion twine box, large enough to carry a half-day's supply, and which will take any sized ball in the market; an adjustable tongue brace; new plan of driving the attachment; new method of supporting the binding attachment, it being supported at all times at the heaviest point; special facilities for cutting even with the ground surface, and extra wide elevators specially adapted to tall and heavy crops, &c. It is said to be the simplest, most capable, and easily operated self-binding harvester yet produced, and is made to cut five, six or seven feet.

### Book Perfecting and Printing Machine.

IMAGINE a roll of paper placed in a machine at one end and books, completely bound and finished, coming out at the other at the rate of 5,000 copies an hour, and you have some idea of a new book perfecting and printing machine. It would appear to those who are acquainted with the intricacies of the multifarious machines usually employed in turning out the full bound book as though

such a machine as this must of necessity be extremely complicated. But it is not. There are three great iron cylinders, segmental in form and each having a diameter of six feet and weighing about three tons each. On one of these are the forms which do the printing in quadruple series, the other two acting solely as impression cylinders. In combination with the cylinder carrying the printing forms are ink fountains, form and distributing rollers, while in combination with the impression cylinders are novel appliances for handling (automatically),



NEW BOOK PERFECTING AND PRINTING MACHINE.

appointments of the establishment. The harvesting machines manufactured by this company and known to the trade are Massey's Toronto light binder, Massey's Toronto mower, the Massey harvester, the Massey mower and Sharp's hay-rake. There were nearly three thousand of the company's binders sold last season in Canada alone, and at that time the capacities of the factory were tested to the fullest extent to supply the unprecedentedly large demand made for this class of machine. The accompanying cut represents Massey's Toronto light binder, No. 4—the company's latest production—which is a marvel of simplicity, elegance and lightness. In its construction steel has been extensively substituted for wooden parts, thus producing a lighter, stronger, neater, and altogether superior machine, a special feature being the doing away with of a large number of parts which were

revising, assembling, folding, covering and delivering the complete books. Imagine the end of a huge roll of paper to be started into the machine; the monster cylinders slowly and gradually rousing themselves from their slumbers and beginning to revolve with increasing rapidity, until, in a little while, books printed, bound and finished, come tumbling out at the other extremity. The insatiable appetite of the monster requires eight tons of paper, with a corresponding amount of printing-ink, and this it turns into books in a single day, and it requires twelve box-cars of 30,000 pounds' capacity each to transfer the output for a single week. This machine is built in Philadelphia, where at one establishment six of these mammoth machines turn with surprising rapidity and regularity their miles of paper into printed matter ready for the perusal of the reader.



### Barrel-Making Machinery.

**D**IVERS machines are employed in the production of barrels, and their construction involves special knowledge and skill for their adaptation to the various details of the manufacture. The firm of E. & B. Holmes makes a specialty of such machines, and the accompanying illustration shows the design of one intended for leveling and trussing slack barrels. This machine is designed for use in cooperages where from 200 to 1,500 barrels can be made in a day. It is strong and simple in construction, has a self-acting leveling head, and by one revolution of the cranks levels the cask and drives all the hoops on one end of the barrel. This machine will work equally well on all sized kegs, or small casks from ten inches in diameter up to the largest-sized barrel, by having extra cones. It is said to be admirably adapted for use in factories where it is not necessary to make over 1,500 a day. A larger machine is made for parties who desire to make several thousand barrels a day. The weight of the machine is 2,200 pounds; floor space required, 3 feet by 5 feet; it contains 115 cubic feet; the pulleys on machine are 24-inch diameter, 6½-inch face; revolutions of counter-shaft, 535; tight and loose pulleys, 14-inch diameter, 7-inch face; horse-power required, three.

### New Key-Seating Machine.

**T**HERE has just been put on the market a new key-seating machine, to be driven by hand or power. The larger sizes are powerfully geared and driven by round belts in the same manner as portable drilling machines. Where large shafts are used in construction of machinery it will be found very useful, saving the handling of the shaft. The machine can be driven in almost any position. It can be attached to any size shaft from 1½ to 6 inches in diameter. The brackets are planed in perfect alignment with the slide beam, making the machine self-setting. They are secured to the beam by bevel-headed bolts and tightened with a nut. The carriage can be used on the end of the beam to cut slots in the ends of shafts. Slots of any length can be cut by slipping the machine along on shafts. The carriage is actuated by a screw and fed by hand, or driven from cutter-shaft to a worm and worm-wheel, as in case of larger size of machine. The screw passes the slide-beam from end to end. The swinging-frame, with arc slots, swings on a pivot. This frame is secured with two bolts in arc slots, and the cutter-shaft has a bearing on each side. To sink the cutter into the work it is only necessary to unslack the bolts in the slotted arcs. Two screws are used to depress the swinging-frame carrying the cutter-spindle. The cutter is secured to the spindle in the ordinary way with nuts, collars and key. When the proper depth is reached the frame is secured by tightening the bolts again. Spiral cutters are used. The machine can be used under a locomotive to cut key-slots for eccentrics in the main axle. In this case a yoke is used, made of steel, with two trunnion bearings and carrying a vertical spindle with a cutter-drill. The trunnions fit the bearings in the swinging-frame, and the attachment is driven by three mitre gears and cranks on either side of the machine. There is means of adjustment to keep the spindle in a vertical position. The machine will be found very useful in marine and steam-engine works also. It can be used to slot key-ways in propeller shafts in case of repairs, and in shops where planers are ordinarily used for slotting heavy shafts

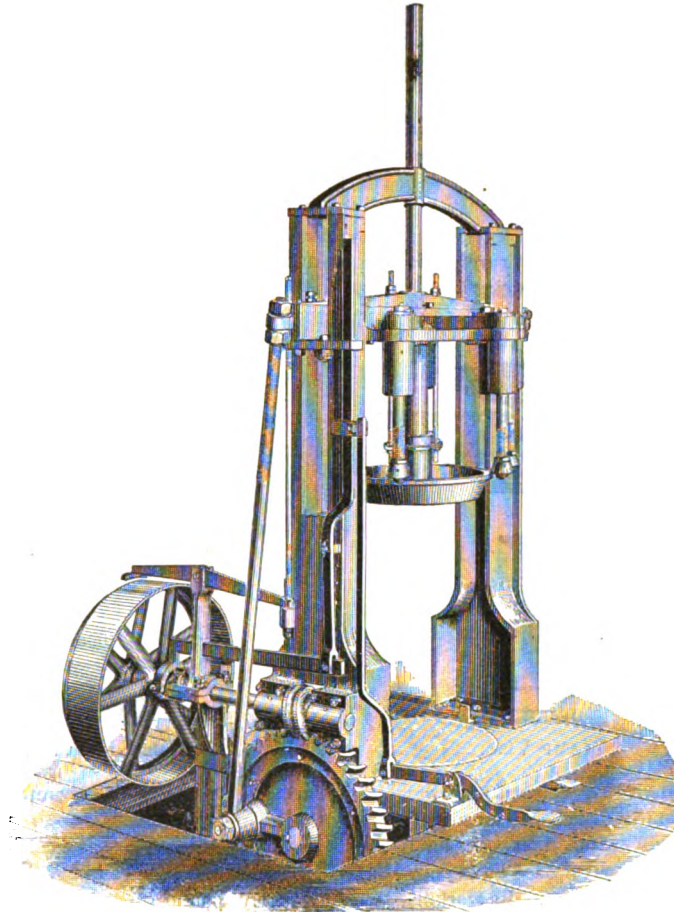
it is readily attached to any shaft within its range of work, and when so attached it is used to great advantage. It is well designed and well built, is easily operated, and is very durable. It is valuable for slotting shafts in position, as in repairs of mills and places where slots have to be chipped with a cold chisel.

### A Big Magnet.

**A** HUGE electro-magnet has been constructed at the Brooklyn Navy Yard by Major W. R. King, of the Engineer Corps, Major King has connected at the trunnions two 15-inch Rodman guns, wound them with about four miles (ultimately he will use six miles) of old torpedo cable, and thus obtained, by the use of a 30 horse-power dynamo, an electro-magnet of enormous power. All of the materials being already on hand, the means of really valuable experiments are thus provided almost without cost. The tests have not yet gone so far as to give quantitative results.

In fact, only a preliminary trial of the magnet (not yet fully wound) has been made, and its whole strength cannot be measured until it has been more firmly anchored. But it shows a tremendous attraction for all things ferruginous. One of the peculiar phenomena observed is that a 15-inch shell, weighing 320 pounds, placed in the muzzle of one of the guns, is violently forced out when the current passes through the wire, yet it does not leave the gun, but swings around to the lower side of the muzzle, where it remains hanging like a carpet tack on an ordinary magnet, even with a second shell of equal weight depending from it. Twenty men cannot pull an iron rail from the muzzles of the guns while the current is passing.

Major King has had an armature made of 11-inch plates, built up to a thickness of five or six inches, for the purpose of getting a more suitable mass for the magnet to work on, and it is stated



MACHINE FOR LEVELING AND TRUSSING SLACK BARRELS.

that a five-ton Duckham dynamometer fails to register a force sufficient to remove it.

### Cultivator, Duster and Digger.

**T**HIS is a machine for preparing ground to receive crops for dusting poison as required, or for digging or harvesting potatoes or other crops. The beam of a plow, having reversely set or double moldboards, is connected at its forward end to a sulky axle, preferably by links engaging a clevis of the plow-beam, the plow having the usual handles. In a couple of eye-bolts in the sulky axle are hooked two draught bars, to each of which a cultivator harrow is held, each of which has a handle, allowing the operator to guide the harrows side-wise, or to lift them bodily to clear their teeth of trash or for passing over obstructions. The opposite harrows are so connected that they may be set nearer to or farther from each other, according to the work to be done, and are so constructed as to allow of the attachment of interchangeable forks or moldboards at the backs of the harrows, and disposed at like angle with the harrow-frame bars, to facilitate potato gathering. On the sulky frame is fitted a box in which is journaled a cylinder or drum, its periphery being made of sheet metal and provided with a series of perforations for scattering or dusting poison upon plants. The drum is rotated by the advance of the machine, from a gear wheel fixed to the sulky axle, through a belt and pulley.



## Hardware.

### The Empire Spirit-Level.

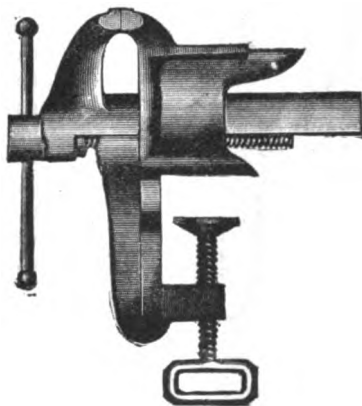
THIS is one of the most practical, durable and cheapest levels in the market. As will be seen by the illustration the glasses are immovable, and being thoroughly protected it is impossible to break them without destroying the entire frame, which is made in one piece, thus rendering them independent of screws or springs, which are always liable to wear cut or work loose. The superiority of this level over those which need resetting is obvious, and being made of metal it is in every way more durable than the well-known and cumbersome wooden level hitherto in use. It is well adapted for any trade in which a spirit level is needed and is in every instance warranted true and correct.



EMPIRE SPIRIT-LEVEL.

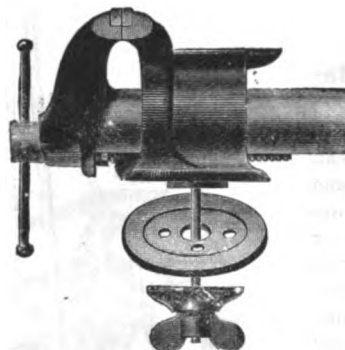
### Some New Vises.

THE clamp vise illustrated is finished in the most careful manner, the thumb-screws being provided with ball and socket jointed cap, and the jaws and anvil being of chilled steel. The important and new feature, which is patented, consists in the widening of the clamp at its junction with the body of the vise, and providing it with two counter-sunk screw holes, which enables the vise in the case of breakage to be secured to the bench by screws in the same manner as the anvil vise made by the same maker. The ordinary vise is worthless if the clamp, which is its weakest spot, should break.



CLAMP VISE.

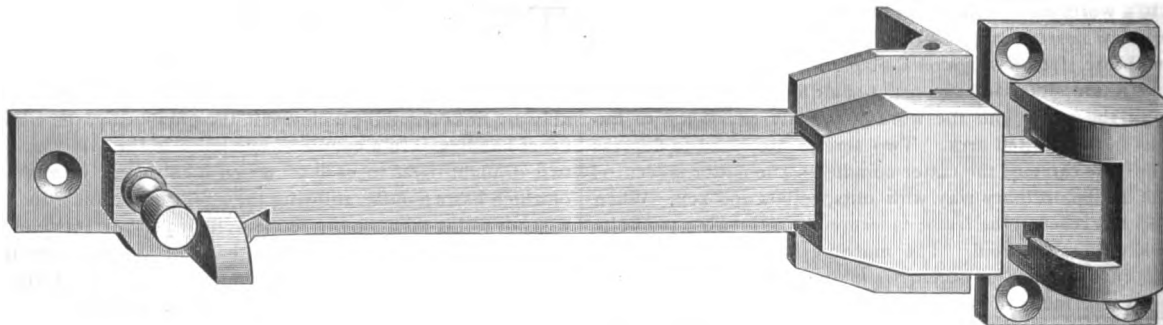
The swivel-base vise with anvil and steel jaws, illustrated on this page, is a beautiful and delicately finished tool, weighing about ten pounds, with checked and tempered jaws, rendering it suitable for the work of jewelers or workers in the finer mechanical appliances and tools. It is provided with a swivel base and bench-ring, and also a half-inch bolt with wing-nut and washer. Its workmanship and exactness of parts are in every way admirable and true.



SWIVEL-BASE VISE.

### Ladd's Patent Door-Fastener.

THERE are many devices for fastening doors, but the door-fastener illustrated on this page is a combination of a door-bolt, which fastens the door as securely as the ordinary door-bolt, and a



PATENT DOOR-FASTENER.

door-fastener which secures the door against intruders when only partially closed. It occupies no more space than an ordinary bolt and has all of the advantages of the "chain fastener," without the objectionable feature of the latter, which mars the edge of the door when open and the wood-work generally.

### Combined Level and Rule.

AN instrument applicable in various ways, as for leveling and obtaining horizontal and vertical angles, consists of a block which constitutes the main body of the level, and having in its forward end a tube bent to the form of an arc, and five or ten degrees longer than a quadrant, being divided into degrees from 0° to 90°. In the back of the block is a groove adapted to receive a folding rule, there being also a recess in the groove to hold a screw-pointed pin, to be used for holding the level upon a tree, post or other proper surface, by passing the pin through an aperture in the block and bringing its screw-threaded end into engagement with the support. A longitudinal bore parallel with the bottom of the block

has crossed wires in each end, the bore to be used for sighting, and to the face of the block is secured a plate which gives the scale of perpendicular of any angle up to sixty degrees. The rule is formed in two sections, connected by a pivot pin, one face of the rule being divided into inches, while the other is marked with angle lines, so arranged that when any two lines formed upon the two rule sections are brought together and form a straight line the numbers placed

in connection with the two meeting lines will indicate the angle at which the two lengths of the rule are extended. The free ends of the rule sections are pointed, so that the rule may be used as dividers. By means of this level the heights of trees, houses, &c., from any given level can be found, and the instrument is designed to be a convenience for mechanics and artists, and for architects, surveyors and engineers as well. This instrument has been patented and will soon be put upon the

market. Its manifold advantages will be appreciated and cause it to be in demand.

### New Screw-Eye.

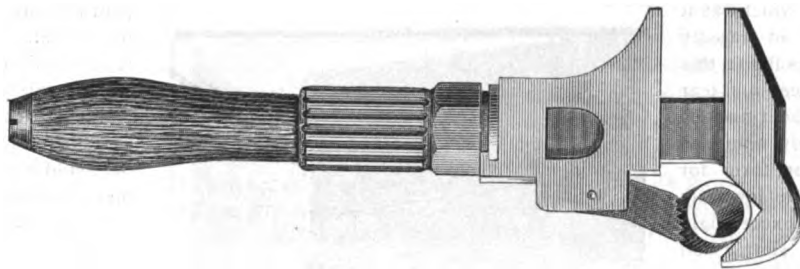
A NEW patent screw-eye lately brought out has advantages which will commend it to use. This article is a convolute screw-eye, adapted for holding and automatically fastening the ends of picture cords and suspension cords, wires and small chains of all descriptions, and for readily adjusting the same any length without the necessity of tying up or twisting the cord or wire. It is intended to be screwed into the frame, and the cord is adjusted or held by making a knot

therein of such size that it will not pass between the convolutions of the cord, or by making a loop in the cord or wire and then slipping the loop into the coil preferably until the innermost turn is reached. It is quickly released by simply slipping it out of the coil again. This hook is made in six sizes, Nos. 9, 10, 11, 12, 13 and 14.



### Engineer's Wrench.

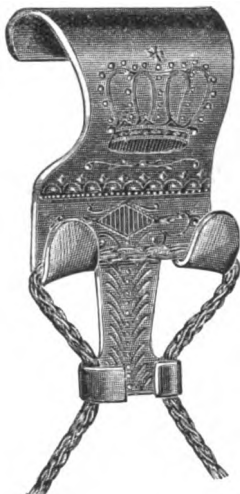
**T**HIS patented and popular contrivance is in effect a combined nut and pipe wrench, and specially designed to meet the wants of engineers, millwrights, machinists and mechanics. Where it is used in contact with pipes it will be found to grip easier and release quicker than any other tool made for that purpose, by reason of the pawl arrangement of the lower jaw, which having thus a wide bearing gives the power to grip without crushing the pipe. The tool is substantially and simply made, the parts being interchangeable, and the sliding jaw serves both to support and stiffen the bar when under strain. Fitted with the long sleeve nut it combines two additional advantages, inasmuch as the polygonal section permits the application of another wrench when extra power is required, and the parallel fluted section affords the best possible grip for the hand. The parts of this wrench are accurately fitted and finished with great care, so that they move readily and with the least possible friction, and the tool is in every way an example of the perfection of hardware manufacture. The prices differ slightly between the long sleeve and short nut styles.



ENGINEER'S WRENCH.

### A New Picture Hanger.

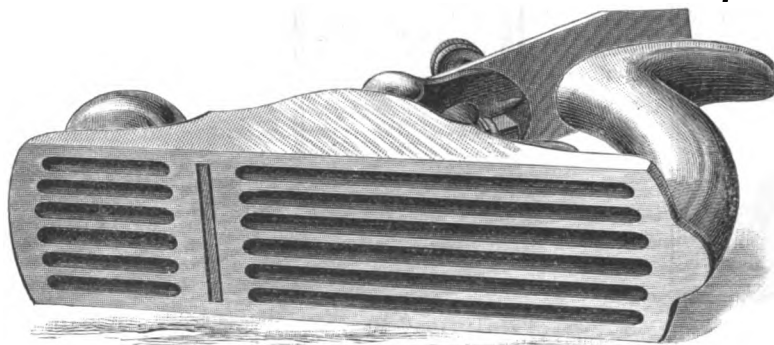
**P**ICTURE hangers hitherto in use have been subject to the following drawbacks, viz., that when the frames were dusted, or the pictures were moved by any cause whatever, their position was liable to be rendered crooked and unsightly to the eye. Occasionally the wire that holds the frame was liable to give way and the picture to fall. These defects are all apparently obviated by the Double Crown hanger, of which an illustration is given. It furnishes a means for suspending a picture from any desired point, even though the ends of the molding should meet at the point where it is desired to hang the picture by reason of its breadth, which enables it to take a bearing on either side of the weak spot. In addition to the hook which engages with the wall there is an extra hanger, from which a small picture may be suspended and be free from the supporting wires of the larger picture. This hanger, whether single or double, is provided with contrivances for locking, by which perfect safety is insured.



NEW PICTURE HANGER.

### A New Plane.

**A**N illustration is given of an iron plane, with corrugated bottom. In this plane the corrugated bottom reduces the traction and friction incidental to its use to the minimum. The corrugations are divided by a series of ribs at the bottom of the planes, which gives the tool increased strength without adding to its weight, and gives air-chambers, whereby the suction is relieved. The handle is made in checked rubber or enameled wood, and so great has been the demand that over sixty different styles are made, covering all of the uses to which such a plane can readily be applied. In the consideration of the advantages of such an innovation in the making of planes the fact that the friction is not wholly proportional to the pressure employed, but is also greater or less according to the surface of the plane, must not be lost sight of, and the production of so satisfactory a tool as that of Chapiin's patent iron plane is due to the practical and theoretical experience of the maker.



A NEW PLANE.

### Checking Spring Door Hinge.

**A** CHECKING spring pivot or door hinge has been put upon the market. This pivot is applied to the bottom of the door, there being another pivot on the top of the door, these pivots taking the place of hinges. The checking spring pivot or hinge is let flush into the floor or sill beneath the door, its object being to furnish at once the hinge on which the door moves and the mechanism by which it shall be automatically closed. It has a heavy iron frame which is covered by a brass plate, which is in sight and flush with the floor, projections on the door or frame being thus entirely avoided. The working parts are made of steel, and the casing which

contains the mechanism is filled with a lubricating fluid, thus insuring durability and smooth working. The liquid used is a non-freezing mixture, and, the casing being practically air-tight, there is little or no evaporation, and dust is excluded. Opening the door compresses the spring, and in this way the requisite power is obtained for closing it. In closing the door shuts quickly until it is three-fourths closed, at which point it cushions against the liquid and travels more slowly the rest of the distance, and stops in its proper position, thus preventing slamming, &c. The closing speed is controlled by a regulating screw which is operated from the surface, this screw regulating the size of the aperture through which the fluid is forced. The point is made by the manufacturers that as there is only one spring used, as against four in a pair of ordinary double-acting spring hinges, and this spring is compressed and not twisted, the liability of breaking is reduced to a minimum, or indeed entirely overcome. The point is also made that the mechanism is so contrived that the greatest pressure of the spring is applied when the door is closed. It is also stated that there is absolutely no noise or violence in the operation of this device.

### Hand-Crimper.

**A** HAND-CRIMPING tool for metals, operating upon a different principle from anything heretofore put upon the market, resembles a pair of snips in general appearance, although there is nothing of the cutting property about it. The crimping jaws are placed at right angles to the handles, which brings them to the most natural position when operating upon the end of the pipe held under the arm of the operator, this position being the usual one where such a tool is employed. The jaws are so located in reference to the pivotal point that the operation of crimping is accomplished in a gradual manner—that is, as the jaws are brought together the serrations on the respective jaws approach each other one at a time, after the manner of crimping rolls, thus greatly reducing the force necessary to be applied to bend or serrate the metal and enabling the operator to work rapidly around the pipe. By the location of the jaws at right angles to the handles the body of the crimper forms a guide or gauge by which the length and depth of the serrations are made uniform.

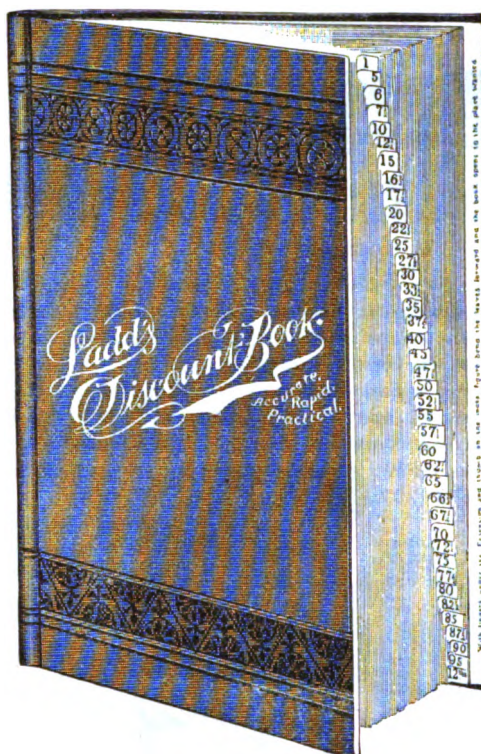
In addition to the crimping jaws a set of plain jaws are provided, adapted to all the uses of an ordinary pair of pliers for twisting wires, &c. This is a convenience which will be readily appreciated. This crimping tool will, it is expected, commend itself to use wherever it may be introduced.



## Fancy Goods, Stationery & Paper

### Ladd's Discount Book.

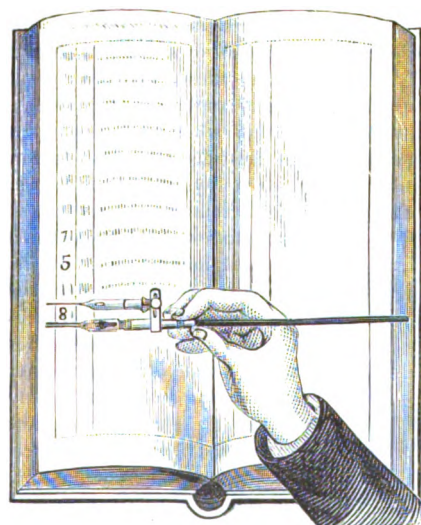
A PRACTICAL and complete labor-saving device which meets a long-felt want, especially in the hardware trade, has been supplied in Ladd's discount book, which, as it states, is a practical means of rapidly reaching absolutely accurate results in this direction without the mental wear and tear of computing. It contains about 120,000 computations indexed for ready reference and arranged in a convenient form for practical use. The tables give instantly the net of any sum and at an exceedingly wide range of discounts, both simple and complex. In addition to this the book demonstrates short methods for computing list-prices when you have the per cent. and the net; to find the per cent. when you have the principal and the net; to add per cent. profit, and to add without figuring the fractional part of a dozen or a gross at any price, and further it gives all discounts which are equal to one another. The mathematical ingenuity and patience displayed in the production of this work is worthy of great praise; it is well bound, and comes with the best indorsements of the hardware trade, for whose wants it is especially prepared.



LADD'S DISCOUNT BOOK.

### "Champion" Blotter Bath.

THE "Champion" blotter bath, illustrated on this page, consists of a hardwood case with cover, lined with metal, to prevent leaking. Into this is set a porous earthen pan, made specially for this use, and which has been prepared and baked in a kiln, much the same as common stoneware or earthenware. This pan is the receptacle for the blotter pads, and is set into the box which is supplied with water, which filters



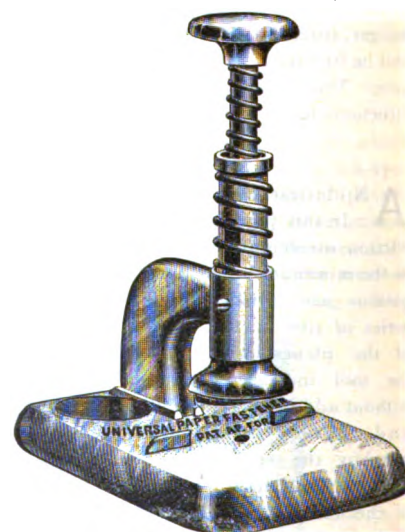
TRIPLE PEN.

### Triple Pen.

THERE has just been put upon the market a triple ruling-pen, which is illustrated on this page. It consists of a holder, which has a metal tip, in which is held a double-pointed pen, which rules two lines. Attached to the metal tip is a right-angled arm, holding a single-pointed pen, which can be put at any distance from the double pen, it being controlled by a thumb-screw in the arm. This pen rules three lines at the same time, two of them close together, and the third at any desired distance. The pen is particularly designed for bookkeepers, for ruling accounts, &c., while it will be found equally serviceable to draughtsmen, architects and others to whose purposes it may be adapted. The wooden holder is polished, and the entire instrument is neatly and substantially made. The engraving shows the method of its use and fully illustrates the convenience which it is designed to meet. The pen will be in demand.

### "Universal" Paper - Fastener Press.

AN illustration is given of a new office convenience, designed for punching paper, in order to insert brass fasteners. In this little tool a blade, which is operated in connection with a spring, is caused to descend through the papers which are to be fastened together, and the fasteners are attached or put through the opening which is made by the blade. The weight is pressed down, holding the papers firm for the blade to pass through; the spring which holds the weight being lighter than that holding the blade, the weight holds the



"UNIVERSAL." PAPER-FASTENER PRESS.

through the pan and is absorbed by the pads, which are then ready for use. Printed directions accompany each bath, and it is therefore useless to repeat them here. One point, however, must be noted: the filtration of the water through the pan makes it absolutely pure, and therefore devoid of the odor so common to other blotter baths. The blotter pads are thus kept neither too wet nor too dry, but evenly moistened, perfect copying of letters being the result.

use and which when once adopted become a necessary part of office equipment.

A new ink blotter is designed to be worn on the hand. An absorbing pad is provided with two elastic bands having buckles, one band being intended to pass between the thumb and forefinger and the other at or near the wrist. This device will be particularly useful to that class of individuals who are forever mislaying things.



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Cable Address, Outchow, New York.

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**S**URVEYS for the proposed Nicaraguan ship canal will soon be under way. A large detail of engineers and assistants has been made and specific instructions as to the initiation of the work have been given by Chief Engineer Menocal. One of the first duties assigned to this detail is a survey having in view the restoration of the harbor of Greytown. The objects sought to be accomplished are very clearly defined, and in the active prosecution of this canal there is more hope for a trans-continental waterway connecting the Atlantic and Pacific oceans than in the canal to which Mr. de Lesseps is sacrificing faith, life and money.

**O**UR exports of domestic merchandise during the last fiscal year exceed those of the preceding year by more than thirty-seven millions in value. This notwithstanding a low range of prices. In closing the calendar year we have to note a satisfactory business situation, trade having been of very fair volume and in generally good condition, despite the piling up of money in the Treasury. The surplus, so-called, has not as yet precipitated financial trouble, and it is still to be decided how this money shall be caused to permeate the channels of trade. The proposed reduction of the Treasury surplus by diminishing the revenue without relieving domestic taxation is not a concession to public needs. We believe rather in distributing our wealth even while its inflow continues.

**T**HE French have the reputation of being the most volatile people in the world, and in their latest political dénouement they have done their best to maintain their position in this regard. The resignation of Mr. Grévy as President and the incidents connected with the formation of a new government under his successor, Mr. Sadi-Carnot, are not assuring of permanent government and domestic peace. The programme of the new executive is definite in its promise of harmony and of attention to the economic interests of the country; but it remains to be seen what assurance there is of this programme being carried out. There is nothing, however, which indicates that France, either by its government or people, is anxious to engage in conflicts with other nations. For the present her fighting will be done at home, and the shifting of the scenes affords opportunity for much speculation as to when and in what shape the next political change or form of government may be expected.

**E**STIMATES for appropriations for the consular and diplomatic service, submitted to Congress by the State Department, include a number of items of increase, justified by Secretary Bayard upon the ground that the representatives of the United States abroad should be better paid. There should be no issue raised on this proposition, which does not involve any question of partisanship. The advocates of pinching economy may oppose the increase asked, but we do not think that they reflect public opinion. Our consuls and ministers are extremely ill-paid when we consider what is expected of them, and it is only proper that their salaries shall be largely increased. With competent men, properly paid for the duties which they are to perform, our government can select its representatives

in other countries, whose conduct shall be creditable and whose every action may be closely scrutinized and strictly accounted for. The Secretary of State also urges that several of the diplomatic missions shall be raised to plenipotentiary rank. This is also a well-advised proposition, which, we trust, will be favorably considered by Congress.

**C**ONGRESS has met, and in his annual communication to that body the President of the United States has positively and unequivocally committed himself to foreign influences. The boldness of this step can only be accounted for by the President's belief in himself as the leader of his party and dictator of its policy. This supreme confidence may be admirable, but it is likely to meet with a check, for it may be broadly stated that for free trade the American people have neither liking nor respect, and that if the conduct of the government is to be shaped on this issue alone, and if the ballot at the next national election is to be decided upon this question, disassociated from any other influence, the public judgment will be expressed by a majority so large as to consign free trade to a political mausoleum.

**N**O other way of reducing the surplus seems to suggest itself to the Presidential mind, which is brimful and flowing over with tariff antagonism. The Message rejects all other considerations relating to the state of the country. It does not discuss our foreign relations nor touch upon the disputed questions with Canada. Neither does it take any cognizance of the high-handed action of Germany in regard to Samoa and the interference with American rights and privileges there or elsewhere. There is no reference made to means for enlarging our commerce abroad or for meeting the competition which promises to cut off our trans-Pacific trade. We fail to perceive any comment on our internal affairs or suggestions as to the promotion of efforts for reducing domestic taxation. These and other things which might be mentioned are among the omissions of the Message, a document more remarkable for what it has failed to note than for what it has presented.

**B**UT it has served to make the tariff a burning question. So far it is good, for it has drawn the issue so sharply that he who would stand or fall by the President must take up his course boldly upon the lines laid down by him. The position is not impregnable, but it seems to have been chosen with the belief that it will not be attacked, or, if contested, that it is so bristling with defense as to be like one of those impenetrable squares, hedged in with steel and fire, which swept the plains of Egypt at the battle of the Pyramids. It is indeed a valiant boast, but after all a mere repetition. Other people have said the same things—and perhaps have said them better. There is nothing novel, no new ground which may add zest to the engagement and put opponents to the test to overcome or turn the position. It is not surprising, therefore, that the advocates of protection should welcome the Message and congratulate themselves that they have now got their adversaries in the open, where temporizing policies and verbal stratagems cannot be taken advantage of.

**M**OBILIZING troops and massing them upon a frontier are pretty sure indications of expected trouble. Russia, just now, is engaged in preparations of this character, this time westward and threatening of war is apparent in her action. It is not to be expected that further hostile operations, if they are to be undertaken, will begin before spring; but the movements of the European powers are very suggestive of what may happen when the severity of winter is overcome. In the meantime, what is going on at the other boundary of the Rus-



sian empire, which is slowly encroaching, like an ocean tide, upon the adjacent littoral? The lack of news and the failure of intelligence as to the work which is being done on the Asiatic railways and in regard to the Russian advance toward India induce the belief that such quiet is portentous. The condition of European state policies is very uncertain and it will not be surprising if peace shall give place to armed conflict within the next six months.

SOME trouble seems to be experienced in settling the fisheries question. Washington advices indicate that the Secretary of State has given up hope of reaching conclusions in any way satisfactory to himself and to have committed the negotiations to the care of a colleague. Then, too, it is rumored that the Dominion Government is not anxious to come to a definite understanding this year. Does the Secretary of State find that he is to be overborne in the arts of diplomacy or has he discovered that the odds are against him? If this matter of the fisheries is to be settled by finesse and not upon the basis of equity, or what we have reason to suppose are just demands and an equitable construction of treaty obligations, it is much to be feared that the United States have little to expect as the result of the labors of the joint commission. Fortunately, the final determination of the issue does not depend upon the dictum of the American representatives in the commission on the one hand or of the representatives of the British Government on the other. That there should be any delay in determining what shall be the exact status of Canada with the United States as to the fisheries seems to us to be needless if the question is to be decided fairly upon its merits. If no agreement is possible it should not be a matter of suspense, which is suggestive of dickerings or something from which the more adroit manipulator is likely to derive the greatest advantage.

THE immigration question is likely to receive considerable attention at this session of Congress. The deportation of paupers and criminals from other countries has been going on so extensively as to cause much objection to the reception of any class of immigrants in this country. But it is not probable that extreme views will prevail. The prohibition of the Chinese has not met with general favor, and the people of the United States will welcome all immigrants of good character who are willing to work and to conform to our laws and customs. A number of propositions dealing with this question will come before Congress in the form of bills. One of these will be to forbid the immigration of convicts, paupers, idiots and insane persons; another will require the certificate of an American consul that persons emigrating are of good character and able to earn their living. Another measure, having in view the troubles and disorders caused by aliens who have been admitted to citizenship before they have acquired sufficient knowledge of our laws and form of government, proposes to extend the time of residence before a declaration of intention to become citizens. It should not be understood that these or any of the propositions likely to follow are intended to shut out worthy and industrious people from the privileges and liberty which our country and laws afford. They are only intended to prevent the immigration of those undesirable classes which foreign governments are only too glad to get rid of. It is evident that some sort of restriction is needed.

MEXICO'S foreign trade for the last fiscal year shows a gratifying and surprising increase. We say gratifying, not only because we are glad to note the prosperity of Mexico, but also because the United States share in the results of this enlargement of trade intercourse. Mexican exports during the

past year were six and a quarter millions of dollars greater than for the preceding year and show an increase of about fourteen millions of dollars compared with 1883. One of our Mexican contemporaries, in giving the figures of this export movement, remarks that "this array of figures furnishes the best justification of the policy which has given us the railways which open up to interior planters and miners new avenues for sending their products out of the country, and these statistics also show clearly how the purchasing power of the nation is increasing, and, in addition, demonstrate the capacity of Mexico to make of herself a great commercial nation." While there is good reason for this congratulation it must not be forgotten that to American enterprise is chiefly due the railway extension spoken of, and that the facilities of communication with the United States thus afforded have given the opportunity for developing Mexican commerce. This is indicated by the exports hitherto, amounting to 56 per cent. of the total, metals and merchandise together, or 71 per cent. of the merchandise exports alone. With liberal government, public improvements and efficient administration Mexico can take the lead of any of the Spanish-speaking countries of the American continent. Her resources can be easily developed under benign administration and proper encouragement and protection to enterprise.

#### AUSTRALIA AND THE TIN SUPPLY.

AS Australian tin production has of late years ranged from 10,000 tons per annum down to 7,500, we will present a few details which will throw some light on the general tin supply since 1877 on the one hand and on the latest tin-producing colony in Australia, that is to say, Tasmania. The great advance in tin would have been impossible only for the fact that during the past ten years consumption has outstripped the production considerably. During the past ten calendar years the world's production of the metal has been 402,071 tons in the aggregate, while consumption reached 411,169; the excess of the latter over the former consequently was 9,098 tons. The average production was 40,207 tons per annum, and confined to few countries, viz., Cornwall, in England; the islands of Banca and Billiton, in Netherland India; the Straits Settlements, in the Malay Peninsula; the mainland of Australia and Tasmania. Some moderate supply is in prospect from Salamanca, in Spain, and from Dakota. Nowhere else is tin found in paying quantities. As its use is universal and growing, it has become the football of speculation in London, Holland and New York in the metal line; it has indeed been so for the past fifty years. When Australia, mainland and Tasmania, began producing it at the rate of 10,000 tons some ten years ago, it dropped to £53 per ton in London, but commanded £152 last November, because a French syndicate had gradually been buying up the metal, basing its calculations on the 9,098 tons difference in the ten years we have pointed out. While consumption has been steadily increasing on the continent of Europe, and in this country in particular in the past few years, and even this year, tin has been a metal whose production could not be much increased from one month to another, nor from one sixmonth to another, even under the stimulus of higher prices. It differs therein from most other metals, and, as we have shown, it is found in few localities.

Tasmania is an island at the southern extremity of the continent of Australia, from which it is divided by Bass' Straits, 120 miles wide, the important gold-producing colony of Victoria being on the other side of the straits. Tasmania was discovered in 1642 by the Dutch navigator, Abel Jan Tasman, and by him named Van Diemen's Land, the name by which it was known down to 1853. It was formally taken possession of by England in 1803. It is one of the most wealthy British colonies; all of the principal towns are united by telegraph, of



which there are 1,635 miles open; there is a duplicate electric cable between Tasmania and Victoria, whence land lines extend to Port Darwin, and thence to England via Java. No less than eight steamship lines keep up communication with the mainland, Europe and this country. There are 246 post-offices. The island contains 15,000,000 acres of land and the fifty-five islands connected with it 1,250,000 acres. There are now 442 miles of railway in the colony, constructed or in course of construction. The exports of the island are principally wool, tin, grain, fruit, preserves, gold, hides, skins and leather, hops, sperm oil, timber, vegetables and tanning bark. The value of tin and gold exported in 1885 was: Tin, £357,587; gold, £141,319. The land in cultivation on March 31, 1886, was 417,777 acres. There were in the colony 138,647 horned cattle and 1,648,627 sheep; the quantity of wool exported in the year 1885 was 5,774,142 pounds, valued at £260,480.

Tasmania has a great source of wealth in her minerals, some of which are now being turned to account. Coal, abundant in quantity and of good quality, is found in many parts of the island. Iron ores exist in great quantities, and iron of the finest quality has been produced from them. Tin in immense quantities has been discovered at Mount Bischoff, the whole mountain being said to be intersected by veins of that ore. The northeast portion of the island is also rich in tin. There exists in the island an enormous lode of bismuth, said to be the richest in the world. Copper, silver and antimony have also been found, the copper yielding 30 per cent. of the metal. Along the northern coast is to be found slate of first-rate quality.

On April 3, 1881, the population of Tasmania was 115,705. Hobart Town had last year a population of 29,987; Launceston, 18,628. There are five banks established in the colony; the total deposits on December 31, 1885, were £3,640,428, the note circulation was £153,622. There were 194 state schools in operation December 31, 1885, the number of scholars on the rolls 15,418, and the average attendance 7,465. In all twenty-seven scholarships are awarded to enable the more proficient youths to pursue their studies in a university of the United Kingdom.

From what precedes it will be seen that Tasmania may in every respect be called a model colony, and that there is no obstacle to its making the best of its mineral resources, tin in particular, in which it so much abounds. Perhaps the present high price of the metal may be productive of great results.

#### CHILI AND THE RISE IN COPPER.

THE months of October and November were marked by an extraordinary advance in both of the leading metals—tin and copper—in the world's markets. Tin advanced from £105 in the London market to £165 10s. for spot, and copper from £40 to £65 10s., the corresponding improvement being from 23c. to 34½c. for the former, and from 10¾c. to 14¾c. for the latter, in New York. In 1885 the world's copper production was distributed as under: North America, 76,247 tons; Europe, 74,850; South America, 44,550; Australia, 11,400; Asia, 10,000, and Africa, 5,700, together 222,747 tons. Toward the amount produced in South America Chili contributed 36,650 tons. Production in Chili decreased by degrees in consequence of the decline in the value of copper, brought about on the one hand by the enormous increase of production in the United States, and on the other by the large output in Andalusia, Spain (Rio Tinto), and the neighboring strip of Portuguese territory.

In the United States copper production was only 27,000 tons in 1880; it was 32,000 tons in 1881; 40,467 in 1882; 51,574 in 1883; 63,555 in 1884; 76,247 in 1885, receding to 70,880 tons in 1886. In Chili during the twelve years from 1875 to 1886 there was a gradual decrease of production of 16 per cent. The six

years' production from 1875 to 1880 aggregated 280,720 tons; the next six years, 1881 to 1886, the output was only 235,549 tons, the falling off being 45,171 tons. During the first ten months of 1887 Chili shipped abroad only 26,375 tons, against 31,806 during the corresponding period of 1886. In other words, Chili's main industry, that of copper production, suffered an alarming decline, the only sore point in its otherwise healthy state of prosperity. Now that copper has advanced again and is not likely to decline in a hurry to the low level it reached during late years, it is evident that under this important head better times are in store for the republic, and that this branch of mining will have a new impulse on a more remunerative basis. The stock of copper in Europe has been materially decreased—some 15,000 tons in England and France alone—chiefly by rapidly growing consumption, electrical apparatus in particular using more copper than it ever did before all over the civilized world.

The republic of Chili, which will soon be in intimate connection by transcontinental railways with the Argentine Republic, is rapidly developing its other great resources, and has the great advantage that it has had for more than half a century an orderly and firmly established government, and enjoys a high financial credit. Chili has, according to the last census, a population of about 3,000,000 people. Its national indebtedness did not exceed on December 31, 1886, the sum of \$83,826,699. During the calendar year 1886 the imports of merchandise amounted to \$47,101,350, and the exports of products to \$53,581,641 in value. It possesses more than twenty banks, with deposits of over \$70,000,000. The geographical configuration of Chili, long and narrow, with a great coast line and more than fifty seaports, makes the country unusually independent of railroads as means of communication; but Chili was the first of the South American nations to introduce railroads and telegraphs, and while Brazil, Peru and the Argentine Republic have a greater mileage, Chili, in proportion to population, stands at the head both in railways and telegraph lines. Of the latter she has 15,000 kilometres in operation; of railways, 2,500 kilometres, with 3,000 more in process of construction. The national finances of Chili have always been ably and conservatively managed. According to the last report the annual expenditure was \$34,000,000, and the revenue \$36,000,000. Three millions are devoted to public instruction, which is free, as in the United States, in all grades, and the country has 1,500 primary schools, attended by more than 100,000 children of both sexes. In spite of her costly war with Peru, the public debt, as we have shown, is comparatively small, and she has recently refunded her old foreign debt in a new 4½ per cent. loan of over \$28,000,000, which was taken at par by the London Rothschilds.

Aside from agriculture, which is highly prosperous, Chili is very rich in mines of coal, copper and silver, and in the possession of guano and nitrate deposits. She exports large quantities of wheat to Europe, and Chilean wines are beginning to attract attention in France, prizes having been awarded them at the last exhibition in Bordeaux. The Argentine Republic is at present Chili's best market for wines, and as her coal will also find purchasers there the policy of Chili has been of late to further the progress of transcontinental railways; and the Chilean Senate recently unanimously voted a subsidy to be used in completing the gap of 140 miles to connect their railroad system with that of the Argentine Republic.

It will easily be perceived how important the revival of an industry will prove in a country so vigorously constituted, and that our domestic exports can only gain by it. We imported from Chili during the fiscal year 1887 \$2,863,233 worth of goods, and shipped thither domestic goods to the amount of \$2,062,507. The previous fiscal year the respective amounts were \$1,182,845 and \$1,973,548.



## Communications.

### South Australia.

ADELAIDE, October 20, 1887.

IN South Australia we have had a succession of bad seasons, and this, combined with the almost complete stoppage of the copper mines, has led to considerable depression, which is now passing away. The present wheat crop is assured, and unless very unseasonable weather is experienced within the next few weeks the average throughout the colony will probably be the largest reaped for years and the total return will undoubtedly be larger than ever. The estimate for the country north of Adelaide is about twelve bushels and for the colony throughout will probably be higher.

The opening of the silver mines on the Barrier Ranges, about three hundred miles northeast of Adelaide and a few miles within the boundary of the colony of New South Wales, has led to a great deal of trade. The railway from the main trunk line to the border has been working for several months, and the tramway thence to the mines will be open before you receive this. All of the traffic of this immense district will come to South Australia. The discovery of these mines has led to the more complete prospecting of the vast northeastern country, which is fit only for pastoral purposes, but is known to be rich in mineral wealth. This prospecting has resulted in some considerable finds, including the Teetulpa gold fields, on which at one time there were 10,000 men and which have supported a population of between 2,000 and 5,000 for over twelve months. Other silver discoveries have been made at different places, but have not yet been developed to any extent. This development of mining, combined with the splendid season, will give a great impetus to trade in the colony.

A considerable difficulty, which at one time threatened to affect the whole of the colonies, took place in the shipping trade at Port Adelaide last week. The disputed point was whether an association of masters and officers should be allowed to affiliate with the Maritime Council, a body comprising the executive of the various seamen's labor unions. The Adelaide Steamship Company objected to the affiliation, and threatened to discharge its officers. The Maritime Council ill-advisedly called the men out of all the ships in the port, with the hope of forcing the employers to accede to its wishes. It was, however, beaten on every point, and after staying out a week, during which some slight rioting occurred, the men returned to work after conceding all the points for which they struck.

The exhibition has naturally led to several conferences among different trades and professions in Adelaide. None of these was of a more important interest to colonial trade than a recent congress of delegates from the various chambers of manufacturers in the colonies, which, after considerable discussion, passed a motion in favor of intercolonial free trade. There is no doubt that this, if practicable, would be a good thing for the colonies, and that at present there is a strong feeling in favor of intercolonial free trade in some form in all of the colonies. But the diversity of opinion as to the form it shall take will prevent the adoption of the system for some years to come. The free-traders hold that free trade should be extended to the world, while the protectionists, particularly of Victoria, cry for free trade between the colonies with protection against the outside world. The parties are too evenly balanced to allow either to gain its wish. Of course, the Victorian idea is very nice for the manufacturers, as it would give them a privileged market for the goods from their manufacturing, which have been forced into existence, like so many hot-house plants, by the adoption of a protective tariff. Throughout Australia I think, taken altogether, the free-trade party has the majority.

The most pressing question in this colony for some months has been the revision of the tariff. The fight is now virtually over and we are pledged for some time to come to a protective policy. I say that we are pledged for some time because I do not think it is likely that the new tariff will last much beyond the present Parliament, which will retire in 1890. The question of free trade and protection was never put fairly before the constituents at the general elections this year, and the bill was only carried in the Assembly by a block vote, against the expressed feeling of the country shown by meetings held in all centres while the measure was under discussion.

The government has decided to withdraw the prohibition upon the importation of stock to the colony from beyond the seas, but under conditions so restrictive that the privilege will only be availed of for the purpose of introducing high-class animals to improve the breed of our flocks and herds.

Australian statistics just published show that the increase of the population of the colonies for 1886 was 104,000 and that the public debt of the colonies on December 31 last was £153 970,000.

The South Australian Railway statistics for the first nine months of this year show very well. On 1,420 $\frac{3}{4}$  miles open for traffic 2,731,456 passengers and 577,270 tons of goods were carried, the gross receipts being £511,720. The receipts from government land sales during the same period were £56,000, chiefly on account of part payment for selected land.

The statement of revenue and expenditure of South Australia for the quarter ended September 30 shows a revenue of £489,974, an increase of £81,145 on the corresponding quarter in 1886. The expenditure was £516,201, a decrease, as compared with the corresponding quarter of 1886, of £16,134. The detailed figures show an improvement in all branches of the public service, particularly of the railway department, and may be accepted as a proof that the prosperity which has deserted us for the last two or three years is returning.

All markets remain somewhat dull and the demands are chiefly of a local character. The uncertainty about the tariff has, of course, contributed to this to a great extent and has completely disorganized the market for the last few months. However, now that this is settled, we shall have things steadier, and as stocks generally are not very large there should be a "boom" in trade almost immediately. The continued low price of cereal products is the only drawback.

The Chaffey Brothers are very busy on their irrigation works at Bookmark and Meldura. At Bookmark the surveyors are at work on the country, but it is now too late to hope for any progress in cultivation this season. On the Meldura settlement in Victoria about 8,000 acres have been divided into ten-acre allotments and a considerable proportion has been taken up, among the selectors being many prominent nurserymen and agriculturists. The township of Meldura has been laid out. Five acres are reserved for government buildings, and on a block of two and a half acres, reserved for the purpose, a hotel is to be erected immediately at a cost of £3,000. Complete pumping machinery has been ordered for the irrigating work, and pending its arrival temporary pumps have been erected capable of throwing 16,000 gallons per minute, which is quite sufficient to meet the present requirements.

There are over one hundred men engaged in plowing, clearing and dam sinking at Meldura. The chief industry on this land will be fruit-growing, and the plucky irrigationists expect to see every acre of land under cultivation within two or three years. The selectors will be supplied with lumber and bricks at cost price, so as to encourage them to building, and the saw-mills and brick-making machinery are now on the way to the ground. The usual post and wire fence, so prominent a feature in Australia, will be discouraged, and the allotments will be bounded by hedges. The colonies both at Bookmark and Meldura will be surrounded and divided into 10,000 acre blocks, by vermin-proof fencing, so that the destruction of the rabbits will be comparatively easy. It would be well for manufacturers to look after the trade of these irrigation colonies. American experience will give some idea of the value of the trade which will be caused.

Matters at the exhibition are generally very quiet. The hay harvest is keeping farmers at home, and the racing carnival in Melbourne is drawing people away. The attendance is falling off considerably, but taken altogether it has been satisfactory. The question of awards has given a good deal of dissatisfaction. This was hardly to be wondered at, as the classification of goods in many instances was laughably absurd, and the consequence was that juries were called on to pronounce judgment on articles in which they could hardly be called experts. It is not surprising, therefore, that mistakes were made, but this should not have been the case, and exhibitors have good reason, in many instances, to feel annoyed.

Trade at the exhibition is not worth speaking of, and large orders are almost unknown. The immediate results of the exhibition from a trade point of view will be somewhat disappointing, but the goods sent here have received a splendid advertisement, which must later



Wool, and manufactures of—		Wool, and manufactures of—		Zinc, and manufactures of—	
Timber—Sawed.....	96,968	Household furniture.....	200,882	Ore or oxide.....	2,072
Hewed.....	21,089	Wooden ware.....	28,592	Pigs, bars, plates and sheets.....	.....
Logs, and other timber.....	122,805	All other.....	147,059	All other manufactures of.....	740
Manufactures of—		Wool, raw.....	.....	Articles not elsewhere enumerated—	
Doors, sash and blinds.....	20,696	Carpets.....	315	Unmanufactured articles.....	68,336
Moldings, trimmings and other house		Flannels and blankets.....	2,236	Manufactured articles.....	77,976
finishings.....	13,990	Wearing apparel.....	30,781		
Hogsheads and barrels, empty.....	6,238	All other manufactures of.....	12,156	Total value of exports for the month ..	\$75,027,423

## General Notes.

THERE are 200,000 miles of railroad in the United States and it takes five kegs of railroad spikes per mile to keep up repairs, which makes an annual consumption of 1,000,000 kegs. To this must be added three and a half tons per mile for the 12,000 miles of new road which is built annually.

THE enormous increase in the world's wool crop is shown by the statistics collected. In 1850 the world produced 790,000,000 pounds; in 1886 there were produced 1,911,000,000 pounds. The average yield of clean wool in 1850 was 65.1 per cent.; in 1860, 63.9 per cent.; in 1886, 54.5 per cent. Since 1850 the production and consumption of clean wool has increased nearly 103 per cent. The consumption per head of population is now reckoned at 2.66 pounds of clean wool; 2.33 pounds in 1870, and 1.93 pounds in 1850.

WHILE digging a well about twenty miles from the Texas line in Lincoln County, N. M., J. H. Miller discovered an elephant tusk three feet long and four inches in diameter. The tusk was in a splendid state of preservation when exhumed, but after being exposed to the sun it began to crack and shell. There was in sight at last report a rib bone in the side of the well, bedded in white sand, and about twelve inches thick. A tooth has also since been dug out. Mr. Miller thinks the entire skeleton is near, as there is no sign of wash or overflow.

THE value of the matches exported last year from Japan, principally to China, amounted to about 37,801,756 yen, the busiest shipping port in this branch being Hiogo Osaka. The prices in Japan vary from 10.50 to 12 yen for common quality, and 14.50 to 15.50 yen for superior quality per case, containing 600 dozen boxes. The freight on matches is high, owing to the risk attending their transport, and amounts to 1.25 to 1.50 yen per case to Hong Kong, and the German mail steamers refuse to take Japanese matches on board. At the present time there are thirty match manufactories in Japan, the most important being that of Shinsnisha and Tokio and Romesha in Hiogo.

MACHINERY for the sugar refinery to be erected at St. Cloud, Fla., has arrived at Kissimmee and is being hauled to its location. It required seventeen cars to transport it from Pennsylvania and will require the expenditure of a large sum of money to get it in operation, but the incorporators of the enterprise are amply able to do so, and will push the work forward with all possible speed. Thousands of acres of the reclaimed Disston land have been planted with cane, and the agent at St. Cloud is closing contracts with farmers for miles around to take all the cane they will grow. St. Cloud is an English settlement eight miles from Kissimmee, and is one of the wealthiest colonies in the State.

ABOUT 1,400 waterworks are at present known to be in operation in the United States, nearly 1,000 of which have been constructed since 1871. In the ten years closing with 1860, 52 new works were built. In the next decade the record was 79. In the like period ending with 1880 354 waterworks were erected. The first six years of the passing decade saw 623 different works put into service. In New England there are 258 waterworks, or one to each 240 square miles; in the Middle States 388, or one to each 288 square miles; in the Southern Atlantic States 54, or one to each 4,755 square miles. In the Gulf States there are comparatively few, population being sparse, cities few, and the surface of the country making water supply difficult.

BETWEEN 1884 and 1886 there was a remarkable diminution in the external commerce of Russia, the export trade having fallen from about £50,000,000 in 1884 to about £40,000,000 in 1886. An English report from St. Petersburg, however, notes that a revival has taken place during the first half of the present year, the fall in the value of the ruble having stimulated exports, while it contracted imports. The export trade for the six months amounted to £21,500,000 (taking

the ruble at 11 to £1), as against £15,500,000 in the corresponding period of 1886, showing an increase of £6,000,000. The import trade, on the other hand, has fallen from £15,900,000 in 1886 to £14,000,000 in 1887, showing a decrease of £1,900,000. The fall in the value of the ruble has especially stimulated the export of grain, and more than half of the increase in the total exports is accounted for under this head. Oats, which in 1886 were shipped to London from St. Petersburg, freight and insurance included, at 15s. 6d. per quarter of 300 pounds weight, are now being shipped in the same way at prices ranging from 10s. 4d. to 10s. 6d. a quarter, and wheat, which last year was shipped from St. Petersburg to London at 32s. 6d. per quarter of 498 pounds, is now delivered at that port at 23s. 6d. The diminution in the imports extends to nearly all articles of commerce. Great Britain takes the first place in Russian export trade as being the great market for Russian cereals, but Germany has front rank in the matter of imports. Of manufactured articles Germany supplied during 1886 £3,400,000, and Great Britain £1,800,000. Coffee and raw cotton reach Russia mainly through English and German houses. More than one-third of the total imports into European Russia during 1886 came from Germany and nearly 30 per cent. from Great Britain.

THE great spread of instruction in the English language in Japan has naturally led to a growing demand for English books. Over 85,000 English books of all classes were imported last year, as against 40,000 in 1885. The import of American books—that is to say, of books printed in America—increased from 59,000 in 1885 to 119,000 in 1886. Sir F. R. Plunket, British consul at Tokio, remarks upon this: "An argument against a large import of educational works has hitherto existed in the fact that foreigners have no claim to the protection of the Japanese copyright, and any work that gained extensive popularity was sure to be pirated by Japanese publishers, and cheap editions of it issued that could be profitably sold at far less cost than the imported originals. This difficulty has been and can be got over by the co-operation of Japanese booksellers, and in this way not only is the benefit of copyright obtained, but the books are sold at lower prices than were formerly obtained for them by European booksellers in Japan." A large demand during the year for printing-paper is traced principally to the publication of numerous translations of English works on law, political economy, history and other educational subjects.

TELEGRAPHING from moving trains has become the regular thing on the Lehigh Valley road, according to the *National Car-Builder*. It has been found in practice that a separate line strung on short poles is preferable to the ordinary telegraph wires, or a wire laid along the rail. The metallic roof of a car and the truss rods on the under side of it are connected with each other and form the induction coil. The operator has his office in the drawing-room car. Telephone receivers are used in preference to the ordinary sounders, the vibrator of the sending machine transmitting the currents so that the buzzing sound is reproduced in the receiver to represent the dots and dashes of the ordinary alphabet. The railroad company has found it very convenient already, in cases where a breakdown has occurred several miles from a station, and the time will soon be, undoubtedly, when the business man will regard it as indispensable.

SOME very careful and elaborate experiments on journal friction have lately been conducted by John Goodman, Stud. Ins. C. E. These experiments showed that the lubrication is most perfect and the friction at a minimum when the width of the brass subtends an angle of from 80° to 110° at the centre of the shaft. This has been very generally recognized, but the conclusion that the lubricating groove along the centre of the brass should run clear to the ends is not always followed in practice. The experiments showed that lubrication by means of a siphon dropping oil at intervals is a very imperfect method, especially where the pressure is constant, and the groove along the crown of the brass does not run out to the ends of the brass. The pressure on the journal forces the air out. Pad lubrication was



found to give better results, probably because the oil is used over and over again until its lubricating properties are exhausted, while with siphon lubrication the oil is often wasted before it has done efficient work.

THE total immigration into the United States from all countries except Canada and Mexico during the nine months of the present calendar year was 411,000, against 294,596 in the same period of 1886. Of this number about three-fourths, or 313,106, arrived at the port of New York, against 233,500 in 1886. The United Kingdom is responsible for a large portion of this year's immigration, as 144,148 immigrants came from that country, against 99,040 in 1886. Germany ranks second, with 88,700 immigrants, against 63,446 in 1886. Norway and Sweden, Italy, the Austrian empire and Russia rank next in the order named. The immigration from Canada and Mexico evidently is not of large proportions, as the above figures are said to include 98 per cent. of the total immigration into this country.

RECENTLY the gas company at Lyons, France, introduced very successfully a system for the utilization of fine coke dust, by transforming it into briquettes, for which there is a great demand at the Perrache works. These coke fines are first washed to separate from them all slate or other impurities; they are then dried and heated to about 200° Fahr., and are mixed with 150 pounds of coal-tar pitch, previously ground and heated, for every ton of coke fines. To this is then added fifty pounds of coal-tar, and the whole mass is then fed to a compressing-machine, which turns out the finished briquettes. The total cost of this work at Lyons amounts to \$4 a ton, and the product finds a ready market at from \$5.50 to \$6 per ton. The cost of the whole plant, having a capacity of sixty-five tons per day, only amounted to \$9,000.

THE microphone is now being used in Germany for detecting the loss of water through leakage in mains. The apparatus employed consists of a steel rod, which is placed upon the cock in the neighborhood of which the leak is suspected, and a microphone attached to the upper end of the rod; a dry battery and a telephone complete the equipment. Under this arrangement no sound is heard in the telephone if the cocks are closed and no leak occurs; but a leak of even a few drops through a badly fitted cock causes sufficient vibration in the pipe to affect the microphone and to give audible sounds in the telephone. As to the effectiveness of this system and its consequent peculiar utility, it appears that, with a little practical acquaintance with its working, ordinary workmen are able to detect and localize any leak that may occur.

IT is not often that eight railroads are at the same time under construction to any one place, however important it may be. And yet eight roads are now either actually being built, or soon will be, all to meet at a place where a town has not yet been laid off even. Big Stone Gap is the name of this remarkable place. It is a great gap in the range of mountains dividing Southwest Virginia and Eastern Kentucky, and of necessity the railroads building in that direction must cross the mountains at this place. It is one of nature's marvels. Just by the side of the river, which has broken its way through this great mountain range, there is said to be a most beautiful site of 1,200 acres for a town. Here it is proposed to build an industrial town, and with the unlimited supplies of fine ore and the Elkhorn coking coal and limestone in abundance this place ought to grow very rapidly under judicious management.

DR. CLEMENS WINKLER has published an account of his latest work upon the new element, germanium, recently discovered by him in the Freiberg mineral argyrodite. In his first announcement last year Dr. Winkler stated that the metal was obtained by reduction of the oxide in a stream of hydrogen gas, but since that time large quantities of the mineral have been found and dealt with on a much larger scale. The powdered oxide, after undergoing an elaborate process of purification, is intimately mixed with 15 to 20 per cent. of starch meal, made into a paste with boiling water, and rolled into balls. These balls are then placed in a crucible in contact with powdered wood charcoal and heated to redness. On cooling, each ball is found to be converted into a regulus of metallic germanium. After removal of the adhering charcoal they are placed in a second crucible, covered with a layer of powdered borax glass, and melted in a gas furnace, when they fuse together to a single brittle regulus, fine octahedral crystals being formed at

the outer surface. Commenting upon this discovery, *Nature* remarks that there can no longer be the slightest doubt that the gap in the periodic table between silicon and tin must be occupied by germanium, for Dr. Mendelejeff predicted that the metal thus filling up this particular gap would be found to form, if discovered, a tetrathide of specific gravity about 0.96 and boiling at 160°.

THE report of the British Association committee on the influence of silicon on the properties of steel states that the following are the results of the first series of experiments: On adding silicon to the purest Bessemer iron the metal is originally red short, especially at a dull red heat, though it works well at a welding temperature; the red shortness is increased by silicon. Silicon increases the elastic limit and tensile strength, but diminishes the elongation and the contraction of area, a few hundredths per cent. having a remarkable influence in this respect. The hardness increases with the increase of silicon. With 0.04 per cent. of silicon and 0.02 per cent. of carbon, a steel was obtained difficult to work at high temperatures, but tough when cold, capable of being hardened in water, and giving a cutting edge which successfully resisted considerable hard usage.

### Catalogues and Price-Lists.

#### TO READERS.

THE Catalogues and Price-Lists herewith noticed are valuable for reference. In sending for such lists our readers should mention the date of issue and the page number of *THE MAIL* in which they are noted.

CRANE BROTHERS, Westfield, Mass., U. S. A.—Sample book of "all linen" fine writing-papers. An excellent line of goods.

LANDERS, FRARY & CLARK, New York, U. S. A.—Illustrated catalogue of table cutlery. A very complete publication.

LIEBENROTH, VON AUW & Co., New York, U. S. A.—Illustrated catalogue and price-list, with margined index of blank-books, &c.

CUVAS Y BONN, 15 Whitehall street, New York, U. S. A.—Illustrated and descriptive catalogue—in Spanish—of American manufactures in great variety. An elegant publication.

W. G. WALKER & Co., Madison, Wis., U. S. A.—Illustrated catalogue of news, book and job power printing-presses.

HURLBUT MANUFACTURING COMPANY, Racine Junction, Wis., U. S. A.—Illustrated catalogue of wagon stock, &c.

CLEMENT & DUNBAR, Philadelphia, Pa., U. S. A.—Catalogue of specialties in cedar ware, with price-list.

A. H. ANDREWS & Co., Chicago, Ill., U. S. A.—Illustrated catalogue of church and school furniture, &c.

GRAHAM, EMLEN & PASSMORE, Philadelphia, Pa., U. S. A.—Catalogue and price-list, with illustrations of lawn mowers, sweepers, &c.

NORTH BROTHERS, Philadelphia, Pa., U. S. A.—Illustrated price-lists of hardware specialties.

SAMUEL FAVINGER, Philadelphia, Pa., U. S. A.—Price-lists and catalogues of ladders, and bricklayers', plasterers' and painters' tools.

LOVEGROVE & Co., Philadelphia, Pa., U. S. A.—Price-list, with illustrations, of steam boilers and engines.

LLOYD & SUPPLER HARDWARE COMPANY, Philadelphia, Pa., U. S. A.—Catalogue and price-list of lawn-mowers.

### Business Notices.

THE committee on awards of the American Exhibition, in London, has awarded to Chambers, Brother & Co., Philadelphia, the manufacturers of the well-known Chambers brick machine, a diploma which reads: "For a perfect brick machine." This is the highest award made by the exhibition authorities.

THE Jeffrey Manufacturing Company, of Columbus, Ohio, having lately taken control of the Mey and Oborn patents, announces that it is now ready to supply the market in several numbers and strengths of the Mey-Oborn detachable chain belting, and will be able to supply all sizes and strengths in a comparatively short time. Parties wishing to place orders for chain belting will do well to ask the Jeffrey Manufacturing Company for samples and special circulars. This company also reports that it has made a large number of shipments in the past month. It has a good supply of orders on hand from various parts of the country. Notable among them are large orders for elevating and conveying machinery for shipment to Germany and Australia,



on have a good effect. It is to be regretted that America is not better represented, but the goods which are shown are well able to hold their own with the similar productions of other countries. The Melbourne exhibition next year will be by far the largest ever held in this part of the world, and I would counsel American manufacturers to make a good show. M

## U. S. Ministers and Consuls.

### Agriculture in Ceylon.

CONSUL MORREY.

THERE is a steady improvement in agriculture throughout the island. The natives are growing more grain and the Europeans a greater variety of products than formerly. The demand for foreign farming implements, especially plows, so prevalent two years ago, has, however, about ceased, and will probably be inconsiderable for some time hereafter. Native cultivators are better satisfied with some primitive implement they can make and mend themselves, and after use cast aside carelessly, with which to scratch the ground, than with an elaborate and costly utensil, the very care of which, when out of use, would either be neglected or considered by them an intolerable burden. It is a mistake, therefore, to expect them to patronize largely farming implements the first cost of which would generally be beyond their means, and the use of which would force them into new methods of cultivation, which they do not desire to adopt.

In my judgment the direction in which these people's minds should be turned for improvement is the protection and preparation of their fields for harvest with the appliances already at hand. It is common enough here for people living and owning land near small rivers to vainly sow grain for two or three years in succession, upon the chance of a season proving sufficiently dry to obviate the flooding of the land and destruction of the crop by an overflow of the river. A native goya tells me that sometimes not more than two in five of such sowings result in a harvest, and yet an easily constructed embankment or levee along the river front would effectually protect such land from inundation and render successful crops almost a surety.

To me it seems perfectly natural that a people who adopt such indifferent modes of husbandry should remain content to plow the land they so carelessly sow with a pointed stick drawn by a cow; and until a more provident system of cultivation is taught them their present implements undoubtedly are exactly what they require.

### Geology of Tierra del Fuego.

CONSUL BAKER.

THE geological formation of Tierra del Fuego quite corresponds to that of Patagonia. The mountains, broken and disjointed by the convulsions of nature, with wide seas now running where they have been depressed, are but the continuation and southern extremity of the Andes; while the plains and uplands partake of the same geological characteristics as those which distinguish the Patagonian steppes. In some parts the formation is decidedly volcanic. This is especially the case in the islands of London and Clarence. In the island of Picton and in parts of Onisin pumicestone is found in large quantities. In the island of Packsaddle there are several remarkable basaltic hills, and this formation is frequent in the Straits of Ponsonby and other localities. Other igneous rocks everywhere crop out of the mountain sides. Granite is very prevalent and quartz abounds. No limestone has yet been found in the country. Iron also seems to be wanting. Some specimens of lead have been exhibited. It is said that coal has been discovered in Slogget's Bay and Cape Holy Ghost, but from the best information I have, the latter formation is merely lignite. In Valentine Bay, as also in Slogget's Bay, there is a black ferruginous sand of a brilliant color, which may indicate the existence of gold in those places.

While no gold has yet been discovered in the southern portions of the country, the precious metal has been found in considerable quantities in various places in the northern. For a number of years the Chilians have been washing gold at the foot of the chain of hills which form the coasts of Useless and Future Bays. Señor Fredrico Mourglia, who has had much personal experience in the country, says that "the existence of gold on the eastern coast is undoubted and only

requires labor to separate it from the sands; while the northern part of Tierra del Fuego requires a practical exploration to disclose its richness." A well-known English gentleman, who now resides in Córdoba as the head of a commercial house, who was wrecked off States Island several years ago and lived for some weeks at Good Success Bay, the extreme eastern point of Tierra del Fuego, makes the statement that he "found gold there, the rocks on the coast all being impregnated with the shining ore." Señor Felix M. Paz, the Governor of Tierra del Fuego, in a communication to his government, gives an interesting account of a visit to San Sebastian Bay and of the auriferous nature of the sands at that point. He says: "The specimens we obtained are fine, very black, and when washed in a very primitive fashion we obtained leaflets of pure gold, twenty of which went to the gram." He proposes a scientific exploration of those regions, and is satisfied that "there are there the elements of a new industry which will metamorphose that desolate land." Since then other parties have visited San Sebastian Bay and fully confirm what the Governor states on this subject. Indeed, judging from the formation and from the reports of various persons who have prospected there, it is believed that gold abounds along the whole extent of the Onisin chain to the Straits of Magellan and the Atlantic Ocean, and from Useless Bay to that of San Sebastian. In all that country water-courses abound, and wood in great quantities is found for fuel, thus assisting in the mineral development of that portion of the country.

### The Chinese Guilds.

MINISTER DENBY.

PRIOR to the treaty of Nanking of 1842 all communication with foreigners was had through the Co-hong Guild of Canton. Large sums were paid to the Imperial Government for the privilege of the foreign trade. Foreigners could not either officially or commercially communicate with the Chinese authorities except through some member of the Co-hong. The factories at Canton were owned by the Co-hong merchants. They were princely in their dealings. Instances are recorded in which one of them, Howqua, gave \$1,000,000 to save Canton from bombardment, and again to pay the debts of a member of the Co-hong.

The treaty of Nanking opened up China to general foreign trade and the Co-hong was abolished. The spirit of monopoly was not, however, repressed. In 1858 the fourteenth article of the French treaty absolutely prohibited the formation of any privileged commercial society and all monopoly of trade. On the representation of a consul all such associations were to be dissolved; but the treaty has remained a dead letter.

In every city in China there are guilds, controlling arbitrarily every branch of business. Boycotting exists in the most oppressive manner. In the great cities there are numerous trades unions, who regulate hours of labor, apprentices, strikes and prices on the most approved American plan. Mercantile guilds have existed time out of mind.

Each province has its own guild. The guild protects its members against sectional prejudices, prevents litigation, and performs the usual functions of a chamber of commerce. Ningpo is a noted place for guilds. I have visited some of the guild halls, which are gorgeous and imposing. They are designed for an exchange, theatrical representations, shrines and restaurants. The bankers, the silk and tea men, the dealers in lumber, in opium, and the druggists, all have guilds.

It is conceded that these guilds, though despotic, are not altogether harmful. They are held amenable to law, and are ordinarily reasonable in their dealings with foreigners. They administer justice and compel their members to act honestly. Trades unions are very numerous. The Ningpo Fishmongers' Union has a reserve fund of \$700,000, which is loaned at a low rate of interest. There are unions for blacksmiths, carpenters, wire drawers, silk weavers, millers, postal companies and barbers.

The wages would be considered ridiculously low in America. For instance, a Wenchow tailor gets \$5 per month and his food, which probably costs \$1.50 more. For these wages he toils unceasingly, except on the last five days of the year and the first ten days of the new year, with four other holidays. Strikes are infrequent.

The trades unions are noted for their truculency. At Socchow,



not long ago, one of the gold-leaf craft violated the rule which forbids an employer from taking more than one apprentice at a time. He was bitten to death by 123 men, each one of whom bit him.

Labor-saving machines encounter violent opposition. Sheet brass for manufacturing brass utensils was taken to Canton, and to prevent a riot it had to be removed to Hong Kong. Some sewing-machines for sewing felt shoes, imported from America, met the same fate.

Co-operative loan clubs are very common.

It has been stated by some writers that the Chinese lack the power of combining. Certainly this is not true as far as combination for commercial or mechanical purposes are concerned. Wherever they have made settlements in the East they have speedily controlled and directed commercial operations. These guilds have been introduced into California and are very powerful.

Among agricultural laborers there seems to be no combination. Holdings are small and living is cheap. The laborer may save enough to become the proprietor of a small tract; he is conservative and contented; he is not weighed down by caste or feudal laws. If he is endowed with good mental qualities he may rise in the social scale; the examination hall is open to all, and success there insures advancement in the state.

### CONSULAR NOTES.

#### American Trade with Persia.

I am constantly receiving letters from merchants and manufacturers in the United States asking to be recommended reliable parties here with whom they can enter into business relations.

This legation knows of none such that it can take the responsibility to so recommend, and, in this connection, I personally and officially consider it my duty to state that I am earnestly requested by Persians in the highest positions, who sincerely desire to see the commercial relations between the two countries established on a sound basis, to advise that firms in the United States desiring to enter this market send over their own agent or agents to represent them, and that they under no circumstances choose as their representatives foreign or European adventurers on the spot, who, under the pretense of possessing peculiar facilities for doing business, and especially for obtaining contracts from the government, shall, for the purpose of promoting private schemes of their own, seek to obtain the use of the names of the said firms as a sort of guarantee of responsibility. That a lucrative trade can be established between the United States and Persia I am confident, but I am equally confident that to make it successful it must be originated and controlled by our own people at both ends of the line.—*Minister Pratt.*

#### Extracting Gold from Pyrites in Australia.

Among the various methods employed in Australasia for extracting gold from pyrites is that called the "Newbury Vantin System." This system is said to have given much satisfaction at Mount Morgan, in Queensland, and at Sandhurst, Ballarat and Malden, in Victoria. The following is a description of the process: The usual mode of roasting the pyrites is adopted to free them from arsenic, sulphur and other foreign substances, and then the calcined pyrites are mixed with water and brought to the consistency of a thin paste, and placed in a revolving iron cylinder lined with lead, where they are mixed with 1 per cent. of chloride of lime and 1 per cent. of sulphuric acid, and rotated at a moderate speed after air has been pumped into the cylinder to a pressure of sixty pounds to the square inch. The metallic gold attacked by the chlorine gas is converted into a chloride which is readily soluble in water, and after the air is blown off the contents of the cylinder are tipped into a filter, which is an iron cylinder having a percolating false bottom, out of which the air is exhausted by a vacuum pump, and water being freely poured upon the superincumbent pyrites the result is that this is sucked through with marvelous rapidity, carrying the gold in solution. This process has hitherto occupied some twenty-four hours, but now three washings, taking half an hour altogether, are sufficient to treat the contents of the cylinder above, now rotating with a fresh charge. The false chamber is filled with a series of slanting cross-pieces, which enable the exhausted solids to be tipped out after being discharged into the bottom receptacle from the upper part of the cylinder. The auriferous stream is

raised by a pump constructed of composite metal having no affinity to gold into a vat where the sediment is allowed to gravitate, and it is then run into another, tested for gold with sulphate of iron, and run through a bed of charcoal, which attracts all the gold in a metallic form and allows the water to escape. The charcoal, when thoroughly impregnated, is brown in color, and on being gently scraped with a knife shows that it is saturated with gold, and which assumes its usual color. The charcoal is then burned and the pure gold remains.

—*Consul Griffin.*

#### Chinese Agricultural Implements.

Much has been written in regard to the introduction of mechanical tools and agricultural implements among the Chinese, and there is little left to be said on this subject. It is certain that American tools and implements will have to be specially adapted to the requirements of China before an attempt is made on the part of the Chinese to utilize improvements of which they can alone learn by experience. Chinese mechanics and farmers have strong prejudices for the implements that have been in vogue for centuries. Experiments of forcing American tools here have signally failed, with a few exceptions. Among these exceptions I may mention saws, pumps and certain edged tools. When a Chinaman sees something he can use to a profit he adopts it. There is no reason why we should not supply them with tools and implements fashioned after their own models, making them better and cheaper with our machinery than they can be made by hand. Their plows are of the crudest sort, consisting of a crooked beam and a wooden share, used even before the days of Confucius. A light plow, made somewhat on this style, might take with them, and this applies with equal force to their spades, shovels, rakes and hoes. The latter is a much heavier tool than ours, and is extensively used in turning over clods, which, in Central China, is the principal system of preparing the ground for receiving the seed. Many of their mechanical tools are very ingenious.—*Consul-General Kennedy.*

#### American Goods in Malta.

In spite of the existing drawbacks of exporting American goods direct, I believe that there are many articles that might be introduced into Malta with profit to the shippers. Such useful things as platform scales, type-writers, clothes-wringers, and even clothes-pins would find sale here. American organs and melodeons should be more generally introduced, and when introduced pushed. Mere introduction of useful goods will not always be followed by profitable trade. Push and patience, backed by capital, of course, are prime factors in business success here as well as in America. The successful way in which scores of American patent medicines have achieved permanent and profitable markets east of Gibraltar might well serve as an example of how to accomplish a desirable end. A few years ago an American tried, in a half-hearted way, to introduce a light iron plow—just the thing needed, too—to the use of the Maltese farmers. He brought the plows here and then sat in his office and dilated on their superiority over the wooden Maltese plow. But words never plowed a farm yet. While he was comfortably expatiating on the merits of the iron plow the Maltese farmer was turning his land with the wooden one. He should have proved by actual work wherein his iron instrument excelled the old-timers. The result was that the American plows never got a grip on Malta soil, and the agriculturists here still carry on their work with primitive means, preserving the customs and habits of their forefathers of very ancient times, for which reason agriculture in Malta requires an impulse and greater encouragement, which an American farmer would designate as a plow and a drag.—*Consul Worthington.*

The largest sulphur deposits in Colorado are said to be in Hinsdale County, near the head of a small stream called the Rough Creek, which drains the northwest slope of the Bristol Mountains and empties into the Cebolla Creek. It is stated by the local papers that there are several thousand acres of sulphur deposits, which have never been prospected. The beds underlie immense bogs of hematite iron, and clear sulphur can be taken from the deposits, which burns and consumes readily when a blaze is applied to it. The formation in which the sulphur is found is a deep, blue rock, which is so soft that it can be easily spaded. It is of unknown depth and can be seen in a number of places, showing plainly on the sides of the mountains. The iron beds overlying the sulphur are from eight to forty feet thick,



## Foreign Notes.

### Argentine Republic.

The proposition of the Argentine Government for a subsidy to an American line of steamers between New York and the ports of the Argentine Republic, which has been so long under consideration by certain Americans, having been accepted by a British line, the flag of the Argentine Republic is to be carried by these ships, and they are to be required to carry eight naval cadets of the republic on every trip. The vessels are to be made a sort of training-ship for the Argentine Republic. The latter guarantees 5 per cent. yearly on a capital of £360,000, four steamers to be placed on the line, the guarantee to terminate within fifteen years from the beginning of the service, which is to be monthly, the line to go into operation within fifteen months from September 24, 1887.

About the coming wool clip Arning & Hutz write from Buenos Ayres, October 15: The weather has thus far been too severe to commence operations. The general belief is that average quality of Southern wools will be better this clip; less so the Northern. So far hardly any contracts were made. Stock of old wools, 7,000 bales. Northern France has of late been a buyer of old wools at easy rates. The American demand for dry hides has been light during the fortnight at \$2.80 Centre Rios, \$2.52½ Corrientes, and \$3.12½ classified of this province, 80,000 being taken. Indian corn for export is still improving and the price is now \$2.50 to \$2.55 the 100 kilograms at Catalinas or ports on the coast. Exchange, 47¼d.

### Brazil.

F. W. Winkel writes from Bahia, October 26, that after November 1 the 5 per cent. export duty on sugar will cease to be levied. This being settled the sugar trade opened with sales of 19,000 bags No. 7½ to 8 at 1,150 to 1,300 reis, taken for the United States. Receipts were so far light, but expected to increase materially in November. Cocoa—The demand abating prices could not be sustained, declining from 6,800 reis to 6,700, at which 1,000 bags were taken. Rosewood was unaltered at 1,500 to 1,600. Nothing transpired in redwood.

Borstelmann & Co. report from Pernambuco, October 27: Under the impulse of favorable advices from abroad there has been a brisk demand for sugar, of which 59,000 bags brown Pernams and 92,000 bags Goiannas were taken at 1,300 to 1,550 reis for good Americanos.

We find in *O Commercio* advices from Pará to November 1, reading as under: During the latter half of October trade in this city has displayed great animation on the one hand, because receipts from the interior down the Amazon River have been ample, and on the other because prices have been tending upward. Of india-rubber the receipts were 1,120 tons, worth 2,500,000 milreis; of cocoa only 16 tons, worth 9,280 milreis. Sales of india-rubber have been effected at 2,500 reis fine and 1,600 coarse the kilogram, while cocoa brought 560 to 580; 288 tons rubber were shipped to Liverpool. Exchange, 22¾d.

### Burmah.

Bulloch Brothers & Co., Rangoon, November 15, report shipments of rice from January 1 to November 12, which have been as under:

	Shipments		To Other Countries.		Load'g for Europe.		For Other Countries.	
	To Europe.	1887.	To Europe.	1886.	To Europe.	1887.	To Europe.	1886.
From Rangoon..tons.	343,500	308,430	215,100	3,000	4,370	....	....	....
Akyab .....	164,000	118,420	34,000	....	....	....	....	....
Bassein .....	118,400	156,290	200	....	....	....	....	....
Moulmain.....	46,800	47,500	16,200	....	....	....	....	....
Totals .....	672,700	630,640	265,500	3,000	4,370	....	....	....

Of catch the total export had been 11,060 tons (of which 5,590 tons to Europe), against 9,440 (of which 5,840 to Europe) same time last year.

Teak Wood—The export from Rangoon and Moulmain from January 1 to November 12 was 131,000 tons (of which 19,000 to Europe) against 125,620 (of which 20,710 to Europe) same time last year.

### Ceylon.

Volkart Brothers, Colombo, October 1, report that coffee shipments for the twelvemonth did not exceed 180,499 cwt., against 223,693 in 1885-6; 314,811 in 1884-5, and 323,041 in 1883-4, showing that the culture of the shrub steadily declines in the island. Plumbago was moderately active and steady, large lumps being taken for America at 135 to 160 rupees the ton; ordinary do. at 135 to 145; chips at 80 to 90, and dust at 40 to 60. Plumbago shipments to the United States summed up for the fiscal year 1887, 155,609 cwt. out of a total shipped of 233,820; citronella oil, 4,484,988 ounces out of a total of 8,371,426; cinchona, 592,087 pounds out of 14,420,075, and cinnamon oil, 9,720 ounces out of 62,668. Exchange, six months, 18. 5 9-16d.

### Chili.

Weber & Co., Valparaiso, October 14, write about nitrate of soda that buying for Europe had ceased in response to unfavorable advices, but that a good deal was done for the United States. More would have been done for the latter destination but for the little offering and want of ships' room. November-December delivery was nominally \$2.80 to \$2.95 per quintal for 95 and 96 per cent. There were buyers of January-February at \$2.70 to \$2.80. Sales for the fortnight footed up 304,000 quintals at \$2.80 to \$2.98½ per quintal, equal to 8s. 3d. per cwt., with 30s. freight. There were chartered 22,200 tons for Europe. The September

shipments to Europe amounted to 72,820 tons and to the United States 6,000. Loading October 4, 99,800 for the former and 1,400 for the latter. Copper was improving in consequence of the lower exchange sales, 18,356 quintals at \$15.80 to \$16.75, \$16.25 equaling £39 16s., with 27s. 6d. steam freight to Liverpool. Wheat was inactive for export; barley was selling at \$3.60 to \$3.70 the 155 pounds in bags. Coal—Newcastle, spot, was worth 30s. 6d.; Orrell, 28s. 9d.; Australian, 25s.; October-November shipment Newcastle, 26s. to 26s. 6d. Exchange, ninety days, 24¾d.

### China.

Following is Siemssen & Co.'s report, dated Hong Kong, October 10: Since our last of the 17th ult. extensive transactions have come to pass at Shanghai in black teas, of which 42,800 half-chests changed hands at firm rates, except for common qualities. At Foochow the estimate of a deficiency in congous to the amount of 70,000 chests is maintained. The demand for souchongs has been steady, and in scented a good business has also been done at well-sustained rates. At Amoy Formosa oolongs of the better descriptions continued to be readily taken at full former figures, whereas low sorts were depressed, being pressingly offered. Amoy oolongs—All clear leaf has been bought up. At Canton a moderate trade was transacted in congous, while at Macao 14,300 boxes brought 1½ taels per picul advance, and 31,000 boxes scented capers at a decline of 1 tael per picul for medium sorts. Of orange Pekoe 3,600 boxes were taken at 11 to 25 taels per picul.

#### TOTAL EXPORT FROM ALL CHINA.

	Season 1887-8.	Season 1886-7.
To England.....pounds.	87,180,332	116,447,581
America.....	16,385,126	23,405,505
Continent (without Russia).....	1,295,193	1,181,556
Russia.....	11,802,831	11,702,199
Australia.....	20,428,105	18,028,343
South Africa.....	1,473,786	380,000
Totals.....	138,574,463	171,154,184

The remarkable falling off to England and the United States will be noticed.

### Cochin China.

Baere & Co., Saigon, October 21, report with reference to the rice situation that paddy had declined all the way to 93c. and 96c. per picul, but that there had been a slight improvement since, which, however, still leaves the price 3c. to 4c. below last mail's quotation. The daily receipts amounted to 12,000 or 15,000 piculs. As, however, the dealers are losing money, the amount of rice arriving will soon decrease. Manila had stopped ordering, but Hong Kong had resumed; a few Singapore orders had dropped in and 4,000 tons were bought for Europe. Exportation during the fortnight reached 229,609 piculs. Good mill-polished rice, suitable for Europe, was quoted \$1.23 per picul at the close.

### Ecuador.

Advices from Reyre Brothers & Co., Guayaquil, dated November 18, report receipts of cocoa of 6,500 quintals for the first half of November, so that the aggregate receipts since January 1 sum up 639,500 quintals, causing Arriba to drop to \$19 and Machala to \$16. The quality of the former at this time of the year is not very desirable, but that of the latter is, and the receipts thereof are light. The French steamer *Pacificque* was loading for Europe, via the Straits of Magellan, and freights by that conveyance low. The *Charlotte*, a sailing vessel, had finished taking her cargo of cocoa for New York. The exchange on Paris was 3.10 frs. per dollar.

### France.

Advices from Bordeaux of the latter part of November are to the effect that the activity in 1887 wines continues unabated, the demand extending alike to Palus, Bourgeois and classified growths; but proprietors begin to raise their pretensions so much that forcibly a pause seems to impend which may bring about a reaction. Extreme rates have been reached. Thus the Palus are bringing 1,000 to 1,100 frs. the tun; superior Médoc Bourgeois, 1,500; fourth growths, 2,400; second growths classified, 3,400; Pomerol, 2,800, and Pauillac, first growth, 6,000 frs. These are prices which have hitherto only been paid for wines of an exceptionally superior vintage. The quality of the present year is no doubt something extra; yet, admitting that it is, it is questionable whether it warrants the paying of such an exorbitant range of prices.

Prunes had been pushed to such high figures—67.50 frs. the 50 kilograms—that the advance could not be sustained in the absence of a continuous active American demand, and a decline to 58 frs. followed; but American buyers, even at the reduction, abstain from operating.

The *Journal des Fabricants de Sucre*, of November 19, states, with reference to the sugar market and crop prospects, that Continental markets have remained firm, prices generally showing an advance of 75c. the 100 kilograms. The weather has turned colder, which, so far, is satisfactory for the keeping of the beetroots; the quality has gone back a little, but estimates remain unchanged. The crop will be short, especially in France and Austria, where a certain number of factories are already finishing work. The gradual advance in sugar that has been steadily progressing for some time past has attracted the attention of speculators to the favorable position which the article has now attained, as compared with several years past. Under the circumstances there has been good reason for a decided reaction from the low level into which the value had fallen of late years, and it has been merely a question as to how far a rise would be temporarily checked by the supplies of new beet crops, which will be every week assuming larger proportions. It seems, however, that the Continental manufacturer has appreciated the position and has



not pressed sales unduly, so that, with reduced stocks of cane sugar, refiners have already taken off a large quantity of beet, both of old stocks and of the new crop. The visible supply of sugar in Europe and America, Cuba included, on November 18, was 616,983 tons, against 778,662 same time last year, and 1,058,707 in 1885.

The raw-silk market at Lyons was heavy in the latter part of November in sympathy with the uncertain political outlook at Paris, causing both manufacturers and spinners to abstain from operating for the moment. The quiet spread to Milan and even to the markets of the extreme East.

In the French iron markets the intended formation of a syndicate of all French rolling mills, subdivided into four groups, but with a common sales office at Paris, spread a more confident feeling, and orders were commencing to drop in again more freely. The government was meanwhile urged to abolish the temporary admission of pig iron, because it has been a source of abuse. Large orders for war material have been received from China, the bulk of De Bange field-pieces. The late action of the Belgian Government, which discarded at a steel-rail adjudication French rails offered to francs per ton cheaper than domestic, is severely commented upon in France because of its unfairness. Strong hopes are still entertained among rail manufacturers on the Continent that ere long an international syndicate will again be formed.

### Germany.

The general hop report issued at Munich, Bavaria, on November 24, remarks that although it is a well-known fact that the world's hop crop of 1887 does not cover the consumption, the product being 1,640,450 metrical cwts. and consumption being estimated at 1,721,000, the markets have if anything been depressed, because hops from former years are nowadays so well preserved that a good stock of old has prevented appreciation. In 1886 there was an overproduction of 302,410 cwts., or of 17½ per cent. over and above the average. It is not expected that German hops will be exported to the United States, there being a good deal of 1886 German hops still in the latter country, except a few lots of extra quality moderate in amount. English brewers also hold preserved hops, and as a consequence the export from Germany to England has not yet been properly started this year.

About the general sugar situation in Europe we receive the ensuing from Magdeburg, dated November 25, 1887: "Perhaps the chief feature of interest is the firmness shown by the Continental producers, who it was thought might at about this time have been rather free sellers. It is evident, however, that with the probable small supplies for the next six or nine months the market is not likely to be overstocked, as has been the case at frequent periods during the last few years. The International Sugar Conference assembled for the first meeting on Thursday last, and it seems that the subject is likely to be dealt with seriously, and with good prospect of success. Beetroot—Early in the week there were a few days of dullness, and prices declined 3d. per cwt., but there has been a subsequent revival, and last Friday's rates are fully regained. The manufacture is now at the busiest period of the season, and in many districts, in France and Austria especially, owing to the light weight of roots, the first process is already completed in many factories, and it appears that the latest estimates will have to be again reduced. French papers maintain their estimates of 450,000 to 475,000 tons, as against 525,000 tons of Mr. Licht; and in Germany, from August to October, 2,902,060 tons roots were worked, yielding 300,279 tons sugar, against 2,914,283 tons roots, yielding 286,522 tons, last year. According to Licht, the yield in September was 1.29 per cent., but in October only 0.47 per cent. better than last year, and the estimate of 950,000 tons for Germany is now considered a maximum."

### Greece.

Advices from Patras about currants are dated November 19, when the market during the week under review had been remarkably firm, holders being seemingly determined not to sell before spring ere they submit to a heavy decline. The free-on-board quotations per cwt., in cases, were: Filiatra, Kyparissia and Gargaliano, 20s. 6d to 21s.; Campos, 20s. 3d. to 20s. 6d.; provincial interior, 20s. to 20s. 3d.; Pyrgos, 20s.; Patras Seraglia, 22s. The better sorts of Patras Seraglia, Vostizza and Gulf were completely exhausted. Nothing had been done for France. For New York, including freights, good currants might have been procurable at 20s. 6d., but there is no demand from that quarter. The stock still on hand in Greece was 34,580 tons. The total crop result figures up 119,000 tons, against 127,000 tons in 1886. For France and the United States all that is left of suitable quality currants is 24,000 tons, while those two countries together will still require 32,000 tons. The balance of fine quality still available will just about cover the wants of England and the Continent. Up to date the export amounted to 84,595 tons, against 82,310 in 1886.

### Holland.

The *Nederlandsche Courant*, in its monthly coffee review of the third week in November, remarks that good ordinary Java declined in Holland from 48½c. the half kilogram to 46c. in consequence of a fine blossoming season in Brazil of the 1887-8 crop and financial difficulties among coffee holders in that country. The decrease of consumption, combined with increasing stocks, is also disquieting. The statistics at foot show the changes in detail:

#### ARRIVALS DURING THE FIRST NINE MONTHS.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	296,470	272,330	340,080	312,540	378,450	311,800
America.....	144,486	168,375	162,392	142,840	148,849	148,187
Totals.....	440,956	440,705	502,872	455,380	527,299	459,987

#### DELIVERIES TO CONSUMPTION.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	276,970	328,380	317,580	292,190	314,500	287,000
America.....	132,309	176,103	174,714	157,323	154,842	148,830
Totals.....	409,279	504,483	492,294	449,513	469,342	435,830

#### STOCK ON OCTOBER 1.

	1887.	1886.	1885.	1884.	1883.	1882.
Europe.....tons.	129,200	121,450	178,100	179,050	190,250	147,000
America.....	33,402	25,061	26,025	24,076	18,160	24,938
Totals.....	162,602	147,411	204,125	204,926	208,410	172,838

To which add coffee unsold in Netherland Trading Company's hands: 1887, 202,053 bags; 1886, 157,727 bags; 1885, 455,694 bags.

#### AMERICAN COFFEE MOVEMENT.

	1887.	1886.	1885.	1884.	1883.	1882.
Import, during the first nine months.....tons.	144,486	168,375	162,892	142,840	148,849	148,187
Consumption.....	132,141	174,921	174,575	157,200	146,834	142,044
Exports.....	168	1,182	139	123	8,008	5,886
Deliveries.....	132,309	176,103	174,714	157,323	154,842	148,830
Stock, September 30.....	33,402	25,961	26,025	24,076	18,160	24,938

The Brazil coffee crop estimate for 1887-8 is 6,750,000 bags, against 3,250,000 in 1886-7. The actual coffee exports from Brazil during the coffee years ending June 30 have been as under:

1886 7.....bags.	5,893,000	1883-4.....bags.	5,022,855
1885-6.....	5,272,362	1882-3.....	6,254,000
1884-5.....	6,262,286		

Adding stocks retained so far, the average for the current twelve months will consequently, despite the 1886-7 short crop, still be a fair one should the above new crop estimate prove correct.

### India.

Wheat shipments from India to Europe from January 1 to November 12 were as under, in hectolitres:

	To England.	To the Continent.	Total.
From Bombay.....	2,296,800	4,332,600	6,629,400
Kurrachee.....	310,300	75,400	385,700
Calcutta.....	2,308,400	461,100	2,769,500
Totals.....	4,915,500	4,869,100	9,784,600
Against 1886.....	6,714,050	7,692,250	14,406,300

Following are the details of the cotton shipments, &c., from Bombay since January 1 and up to November 17:

	1887.	1886.
Week's receipts.....bales.	7,000	11,000
Since January 1.....	1,534,000	1,432,000
Week's shipments to England.....	2,000	4,000
Since January 1.....	388,000	328,000
Week's shipments to the Continent.....	1,000	.....
Since January 1.....	750,000	680,000
On board ship.....	2,000	8,000

Cotton crop prospects in India are generally encouraging.

### Italy.

P. G. Barff & Co. report from Naples, November 15, about the olive oil and crop outlook that early in November there was a 10 per cent. decline per tun in olive oil, but that there was a rebound since, so that the closing quotation for Gallipoli was £32 5s. and for Gioia £30 7s. 6d. per tun, free on board. The temperature has been too warm and rainy for the season. At one time the olives looked tolerably sound, and there was some speculative selling for a fall; but since then at Gallipoli, Tarante and Gioia olives have dropped prematurely from the trees, and on expressing them give poor returns. The consequence is that there is great eagerness to secure the better quantities of olive oil. Of inferior quality the receipts in port have thus far been light. A few small shipments had been made to England and large lots per steamer to the Continent. Quite a large sale for forward delivery for the Baltic has been made for the spring. Exchange on London, ninety days' sight, 25.10 lire per pound.

### Mauritius.

Mail advices from Port Louis are to the 22d October. During the month under review the business in sugar showed little animation, buyers and sellers being too far apart in their views, but toward the close exporters were more willing to meet the market. Since the opening of the campaign 404,741 bags had been received, against 482,158 during the corresponding period of 1886, leaving a stock on hand of 277,760 bags, against 244,867. For Europe and the United States brown sugars were wanted, but scarce at 10s. 6d. per cwt. cost and freight. They will soon be more plentiful. The Australian and New Zealand demand was about filled. Little was so far doing for India, but a considerable trade in that direction was evidently impending. The decline in exchange seemed arrested; ninety days' sight on London and Paris stood 36½ per cent. premium at the close. Comparative exports to October 22:

	1886-7.	1885-6.	1884-5.
To United Kingdom.....tons.	865	1,483	2,231
France and Continent of Europe.....	5	5	.....
America.....	.....	.....	364
Australasia.....	3,721	4,056	4,382
New Zealand.....	1,136	714	1,266
Cape of Good Hope.....	570	1,231	705
India.....	12,990	18,376	11,052
Other places.....	129	324	206
Total.....	18,811	27,089	20,206

On November 7 the sugar market was quiet, without change. Syrup



sugars, however, showed a declining tendency, No. 10 being quoted 10s. 9d. cost and freight to England.

### Philippine Islands.

As per mail advices from Manila 2,000 tons dry sugar were sold at \$3.12½ per picul, equal to 10s. 4d. per cwt. free on board with commission, and extra superior X No. 9 at \$2.62½, equal to 8s. 9d., at which the market closed quiet. Shipments to date from the three ports footed up as under:

	1887.	1886.	1885.
To Great Britain.....tons.	22,850	22,850	29,247
United States.....	106,750	119,260	116,545
Sundries.....	23,490	23,205	28,681
Totals.....	153,090	165,315	174,473

Hemp has been fluctuating continually between \$9.12½ and \$11.37½ per picul, closing at \$10.37½, which equals £34 7s. 6d. per ton, Cebu rising from \$9 to \$10.75, the latter equaling £36 5s.

The stock of coffee of the old crop was exhausted, and new was only expected in a month, provided the weather continued fine.

Of indigo 47 cases brought \$28 for No. 5. Gum copal was currently sold at \$3 to \$7 per picul, as to quality. Sapan Wood—Good straight blocks were worth \$11 per picul. Cordage had risen to \$15.50.

Cayagan and Isabela tobacco was wanted for home use and export at extreme rates. Nuevo Habano and Cortado cigars were selling at \$9 to \$10 per thousand. Exchange, six months, 3s. 8½d.

### Portugal.

D. M. Feuerherd, Jr., & Co., Oporto, in their vintage circular of November 19, state that during the entire year the weather was propitious to Portuguese vines; that consequently the result of the vintage has been something exceptional, although fogs during blossoming time somewhat curtailed the yield. The amount secured may be put down at 22,000 pipes in the old district, and 28,000 in the new district—together, 50,000 pipes. There are about 3,000 pipes superior quality, 10,000 pipes second quality, still very fine, and 9,000 good new growths in the old district. In the new district the quality is also highly satisfactory, so that the entire 1887 Douro product is likely to be exported. The new wines being a success have brought prices, so far, as high and in some cases even higher than at the outset of the 1886 campaign. The phylloxera has done harm only temporarily; on one estate producing formerly 200 pipes superior wine, only 8 pipes were obtained in 1883, 12 in 1884, 34 in 1885, 42 in 1886, and this year 62. In the Minho, the Bairrada and Lisbon districts the vintage has been both abundant and of fine quality.

### Russia.

The Russian daily press is making a terrible noise about the shipments of refined petroleum from Batum to Bombay and Madras. From January 1 to the middle of November the amounts shipped, all per steamer via Suez, aggregate 858,466 boxes of ten gallons, or 8,584,660 gallons. This is quite a respectable figure for a commencement; still the competition which the American article has to encounter is so far not very formidable, American shipments for the corresponding period to British India running up to no less than 94,576,634 gallons.

### Spain.

The Bilbao iron-ore trade was the reverse of active in November, the mining companies not being prepared to accept the offers made them to contract, especially with English consumers, for forward delivery all the way into the new year, unless it were at an advance. The local trade was sluggish, the bad weather at sea keeping away steamers in search of cargoes.

Greater activity and a better feeling began at length to be noticeable in the Peninsular wine regions and ports. As the new wines do not quite come up to expectations, a rather better demand has sprung up for 1886 wines, still plentiful in the bodegas, and both old and new are now moving off better than the prospects were at the close of the late vintage. Prices, it is true, are low, but viticulturists at least handle cash once more, which causes them to feel more confident.

### South Australia.

Mail advices from Adelaide bearing date October 7 express themselves in a most sanguine manner as to the wheat crop. The crop prospects could hardly be better, and it is believed that the surplus for export will amount to something like 400,000 to 500,000 tons. From January 1 to October 6 the export aggregated 108,149 tons, leaving about 50,000 tons to be shipped. The export of wheat and flour has been as under:

		Of which to England.
1886.....tons.	64,126	6,852
1885.....	322,306	213,286
1884.....	323,406	209,576
1883.....	104,066	18,801
1882.....	150,484	68,959
1881.....	140,645	48,265
1880.....	288,717	189,147

If, consequently, 400,000 tons should be shipped it would exceed any previous exportation in a year. It should be added, however, that usually South Africa, New South Wales and Queensland together take 100,000 tons of wheat from South Australia.

### Straits Settlements.

Following is the report of Gillfillan, Wood & Co., Singapore, October 5: Gambier—The demand for England has been active and the market closes firm, with buyers at \$6.72½. For the United States a moderate business is reported, but as compared with previous months the demand shows signs of being satisfied. Black Pepper—The Settlements fall short of 100 tons, at prices ranging from \$21.30 to \$23.50. Practically the crop is finished, but a weaker feeling is current at the close, and for small lots offering \$23.30 is the best price obtainable. White pepper is finished, the stock having been cleared at the equivalent of \$40 for 5 per cent. Sago Flour—Buyers offer \$2.02½ for Sarawak. Brunei has been sold to a large extent at \$1.92½. The market closes firm. Pearl sago touched \$2.20, but is firmer again at \$2.25. Tapioca is in good demand and firm. For good flake \$7 is asked, and pearl of best quality is not obtainable under \$6.75. Rattans are rather lower, but there are no stocks of good quality. Nutmegs—A fair business is reported in 110 S at \$96 down to \$88 per picul, and 100 S at \$80 per picul. In cloves there have been no sales for some time past. Mace—A few lots have been placed at \$88.50 down to \$80, as to quality. Exchange, 3s. 1¼d.

### Uruguay.

*El Comercio*, of Montevideo, states under date October 23, with reference to dry hides, that since October 7 quite a large business was done for the United States, prices of 21-pound hides improving from \$5.85 to \$5.90, at which 62,900 were taken, and 200 heavy at \$7.90, leaving a stock on hand of 142,500. Some wool of the new clip has made its appearance at the "barracas;" it is of handsome quality and light, but so far nothing was done therein except 700 arrobes superior on terms not transpired. Meanwhile 70 bales of old wool were shipped on consignment. The stock amounted to 1,400 arrobes new and 6,000 arrobes old wool. Sheepskins were quieter: 417 bales were taken on private terms, 50 at a variety of figures, and 120 shipped for owner's account; total disposed of, 587 bales, leaving 423 on hand. Horsehair is also more quiet, but steady, 31 bales being bought at \$21, 2 bales unwashed at \$19, 2 ditto at \$18.75 and 25 bales mixed at \$17. Exchange on London was firm at 51 1-16@51½d.

### Venezuela.

Mail advices from Caracas are to October 18. Cocoa arrivals at La Guayra since October 1 had been 340 bags, of which 221 Rio Chico, Barlovento, Higueroite and Curiepe, 31 Rio Caribes, 67 Choroni and Ocumare, and 21 from other localities, against 101 bags during the corresponding period of last year. The dark Rio Chicos brought \$21.50, the red, \$23; the Higueroite, \$23; the Choroni, \$37, and the Ocumares, \$40. The coming crop promises well, especially at Rio Chico and Tacarigua. The export to Europe during the fortnight was 53 tons. Last crop's stock of coffee was very much reduced, and sales thereof light. Washed La Guayra was paid \$23 to \$24.25; unwashed \$22 to \$22.25, and broken beans, \$16 to \$17.50. So far but little new crop coffee had made its appearance at La Guayra, where it was bringing \$22 to \$23.50. Advices from the interior are to the effect that arrivals will be light for some time to come, the heavy rains having converted the roads into a bad condition. The fortnight's exports to Europe did not exceed 155 tons.

### West Indies.

CUBA.—Mail advices from Havana, dated November 26, state that the weather had been more favorable to canes, now ripening quickly, so that grinding operations may commence with the month of December. Stock of sugar in warehouse at Havana and Matanzas, November 26, 13,000 boxes, 30,000 bags and 416 hogsheads. Reduced to tons the stock on January 1 was 15,572 tons; receipts since, 228, 169 tons; exports, 231,909 tons. Stock November 11, 11,832 tons, against 38,087 last year.

TRINIDAD.—E. P. Masson, Port of Spain, October 28, states about the growing sugar crop: Although there has been a good deal of rain in the island during the fortnight, it has been quite partial, and in the chief sugar districts the drought continues and the crop is suffering much. Shipments up to date compare as follows:

	Hhds.	Tierces.	Bags and Bbls.
1887.....	30,598*	13,524*	328,223*
1886.....	23,044	12,505	195,741
1885.....	41,695	12,833	197,055

\* Of these 29,147 hhds., 13,374 tierces, and 133,299 bags and bbls. have been shipped to United States and British North American Provinces.

Cocoa—The crop will commence making its appearance by the middle of December. Gathering has begun on a certain number of plantations. Meanwhile the market is nearly bare, and the few lots obtainable are bringing \$15.75 to \$16 the fanega. Shipments since January 1 amount to 61,685 bags, against 88,645 in 1886; decrease, 26,860 bags. Asphaltum—Our market has been moderately active and steady at \$9 per ton boiled and \$3 crude. Shipments since January 1 amount to 36,090 tons, against 34,241 in 1886. Exchange, ninety days' sight, \$4.80.

AN Indiana wagon manufacturer has shipped the last of a consignment of twenty-one large log wagons to South America. The wagons are built to haul as much as can be loaded on them. Each weighs about 2,800 pounds, and each wheel weighs 288 pounds. The tires are four inches wide and one inch thick. The axles are of hickory, the hubs of black birch, and the remainder of the wagon is of oak. The wagons will be used in the lumber regions in hauling mahogany and red cedar. This lumber, it is said, can be laid down in New York as cheap as walnut from the United States.



# Review of the Markets.

## Reports for the Month Ended December 1.

**Butter.**—The demand is light, but prices show a higher tendency. We quote: Creamery, 22@26c.; dairy, 19@26c.; factory, fresh, 20@22c.

**Cheese.**—The market is generally quiet and prices are mostly unchanged. We quote: Factory, 11½@11¾c.; creamery, 12@9c.

**Coffee.**—In Rio grades there has been a general improvement and options closed higher. There has been more disposition to buy on the part of dealers and in some instances bidding has been active. Ordinary grades, such as are best obtainable on the spot, have been salable on the basis of 17½c. for fair, with 16½c. paid for No. 6 near at hand. Dark green new crop fair, which is in light supply and wanted, would readily command still higher prices, and buyers would probably pay 18@18½c. for fair. Late transactions comprise Santos peaberry at 19c.; Rio No. 6, to arrive, at 16½c., and Rio No. 7, to arrive by sail, at 15 11-16c. The market left off firm with buyers. The monthly Rio coffee statement of William Scott's Sons is as follows: Stock in warehouses November 1, 1887.....bags. 301,108  
Received since

At New York.....bags. 131,711  
Baltimore.....3,259  
New Orleans.....12,036  
147,006

Total supply.....455,114

Delivered from warehouses since—

At New York.....bags. 146,030  
Baltimore.....11,692  
New Orleans.....18,556  
176,178

Stock in warehouses December 1, 1887—

At New York.....bags. 233,819  
Baltimore.....17,581  
New Orleans.....27,536

Total stock.....378,936

Afloat and loading for United States to October 17.....156,000

Purchased for United States to December 1 (21,000 Santos).....156,000

Total visible supply December 1, 1887.....bags. 434,936

In mild coffees the low price of green Cucuta compared with new crop Brazil grades has attracted the attention of buyers of Rio, who have taken as substitutes Maracaibo at 17c. for Cucuta and 16½c. for the lower grades. There have been sales of Savanilla on the same basis. East India grades have ruled quiet, the only business reported comprising an auction sale of Padang at 20½@23½c., averaging about 21½c. net cash short privilege. We quote: Rio, ordinary cargoes, per pound, 16½c.; fair do., 17½c.; good do., 18@18½c.; prime do., —c. Santos, fair to good cargoes, 17½@18½c.; Java, 19@26½c.; Singapore, —c.; Ceylon, 22@23c.; Maracaibo, 18@19c.; La Guayra, 18½@19½c.; Jamaica, 17½@18½c.; San Domingo, —c.; Porto Rico, —c.; Central America, 18@21c.; Mexican, 18@20c.; Angostura, —c.; Savanilla, 18½@21c.; Mocha, 23@24c.

**Cotton.**—The demand for "spot" cotton is light, but the market is firmer, in sympathy with options, closing at 16½@10½c. for middling. Options have been more active, and closing prices were: December, 10.57@10.58c.; January, 10.65@10.66c.; February, 10.73c.; March, 10.80@10.81c.; April, 10.86@10.87c.; May, 10.93@10.94c.; June, 10.99@11c.; July, 11.03@11.04c.; August, 11.06@11.07c.; September, 10.65@10.75c.; October, 10.38@10.35c.

**Drugs and Chemicals.**—The market is quiet, business being mostly of a jobbing character. We quote: Bleaching powders, \$2.12½@2.15; caustic soda, \$2.40; soda ash, \$1.25@1.27½; sal soda, \$1.25; acetic acid, 2¼@2½c.; oxalic acid, 8@8½c.; citric acid, 50@51c.; tartaric acid, 43@45c. for crystals; acetate of lime, 1.80@1.85c. for brown; aloes, 5¼@6c. for Cape; alum, \$1.75@1.87½ for lump and \$1.87½@2 for ground; ammonia carbonate, 7½c. for English; assafetida, 8@10c.; arnica flowers, 6¼@8c.; albumen, 15¼@16c. for foreign blood; arsenic, 2½@2½c.; balsam copaiba, 45@50c.; balsam tolu, 35@37c.; balsam Peru, \$1.15; bichromate of potash, 10½c. for Scotch; borax, 6@6½c. for refined; blue vitriol, 4¼@4½c.; brimstone, —c. for seconds; buchu leaves, 6¼c. for shorts and 24@25c. for longs; cantharides, \$1.65@1.70 for Russian; camphor, refined, 22c.; castor oil, 16@17c. in bbls. and cases; cardamoms, 60@80c. for Aleppy and 75c. for Malabar; cassia buds, 10½c.; camomile flowers, 30@37½c. for Roman and 15@23c. for new German; cutch, 6¼@8c.; chlorate of potash, 15@15½c. for crystals and 15¼@15½c. for powdered; cochineal, 29@30c. for Teneriffe silver; cream tartar, 34@35c. for crystals and 35@36c. for powdered; gambier, 5¼@5½c.; ginger, 16c. for Jamaica bleached and 10½@13c. for unbleached; glycerine, 22@24c.; Guarana, \$1.35@1.45; iodide of potash, \$2.70@2.83; licorice paste, 28@29c. for P. & S. and 30@32c. for Corigliano; manna, 42¼@45c. for small flake and 80@82c. for large flake; morphine, \$2.95@3.25 for domestic; opium, \$4.30 for new, duty paid; oil cloves, \$1.65@1.80; oil cassia, 60c.; oil anise, \$1.85@1.90; oil lemon, \$1.65@1.85, as to brand; oil sassafras, 42@46c.; oil wintergreen, \$1.85@1.90; oil bergamot, \$2@2.75; oil peppermint, \$1.90@2.10 in tin and \$2.60 in glass; prussiate of potash, 19½c. for yellow; quicksilver, 53¼@55c.; quinine, 30@31c. for German and 34@40c. for American; roots, 3¼@4c. for gentian, Seneca root, 35c., and Colombo root, 7¼@12c.; ginseng, \$2@2.20; sarsaparilla, 7@7½c. for Mexican; seeds, 5¼@5½c. for Trieste brown mustard and 4@4½c. for California yellow; senna, 30@32c. for Alexandria; shellac, for D. C. 20@21c. per lb.; V. S. O., 15½c. per lb.; 1 in diamond, 15¼@16c. per lb.; sticklac, —c. per lb.; sugar of lead, 5¼@5½c. for brown and 12c. for white; tonka beans, \$1.25@1.40 for Angostura.

**Dry Goods.**—The business in the dry-goods market has been without any special features, and while this is a fact the transactions have aggregated large, mostly on account of spring orders. There has been a steady, though moderate, demand for staple cotton goods, and owing to meagre supply and the fact that mills

generally hold large orders prices rule firm. Leading makes of brown drills have been advanced by agents, and sheetings are very firm. Bleached goods are in steady demand, as are also wide sheetings, while colored cottons, as denims, dyed duck, cottonades, chevots, checks, stripes, plaids, &c., are moving steady at firm prices. Print cloths are in fair demand and prices are firm on the basis of 3 7-16c. for 64x64's, and 3c. asked for 56x60's. Fancy prints are in light and irregular demand, but the most desirable makes are steadily held. Shirtings are in pretty good demand, and opening prices for leading makes are regarded favorably by buyers. Dress gingham, cords, Scotch zephyrs, seersuckers, chambrays and other wash dress goods continue in good demand for the coming season, and the most popular makes are largely sold ahead by agents. Staple gingham are doing well in some quarters, and leading standard makes are well sold up and firm in price. Dress goods are in irregular demand. There is a fair business in woolen lines, and the deliveries in the execution of spring orders have been free.

**Freights.**—There is nothing out of the routine in berth rates. Grain freights to the United Kingdom ports remain about as before and very moderate offerings. Miscellaneous freights are offering in moderate quantities and rates are, for the most part, the same. Vessels for grain charter are still offering at 3s. 9d., and are not in request at that or even at a lower figure. Petroleum vessels are in fair request, but are still scarce, and business is for the most part in advance of arrival and at full rates. On the spot 2s. 4¼d. has been paid for a large carrier to London, and 2s. 7¼d. for Liverpool. In direct cotton charters not much actual business is doing, but rates are pretty well sustained. Miscellaneous charters have done full as well as usual and a fair business has been consummated.

Quotations from New York to United Kingdom and Continental ports:

Steam.	Grain.	Oilcake.	Flour.	Sugar.	Provisions.	Cheese.	Beef.	Pork.	Cotton.
Liverpool	3	10.	10@12.0	15.	17.6@20	25.	3.	2.6	9.645-3rd
London	3½ asked.	12.6	12.6	15.	20.	25.	3.6	2.9	....
Glasgow	3½	11.3	12.6	12.6	17.6@20	30.	3.9	2.9	....
Bristol	4¼ noml.	15.	15.	17.6	17.6@20	25.	4.	3.	....
Leith	3½	12.6	13.9	15.	20.	22.6	4.	3.	....
Hull	3½	12.6	13.9	15.	20.	25.	4.	3.	....
N'wcastle	4¼@5	12.6	13.9	15.	20.	25.	4.	3.	....
Antwerp	3½ asked.	12.6	13.9	15.	15@17.6	..	..	..	11.645-3rd
Hamburg	50*	..	..	..	80 pf.	..	..	..	3-100.
Bremen	50	..	..	..	80.	..	..	..	3-100.
Copenh'n	2.3@2.6	..	..	..	22.6	..	..	..	....
Marseilles	3.3 noml.	..	..	..	20@25	..	..	..	....

\* Store.

Cork for orders, sail, 3s. 9d. nominal. Steam, 3s. 9d. Direct port, United Kingdom, 3@6d. less.

### OIL QUOTATIONS.

	Refined Petroleum.	Naphtha.	Levant.....	Cases.
Cork and United Kingdom...	3.3@3.3	3.3@3.6	Adriatic.....	18
Direct port, United Kingdom...	2.6@3.	3.3@3.1	Mediterranean...	16@19
Direct Continent.....	2.7½@3.	3.3@3.6		
Baltic.....				

**Fruits.**—Raisins are strong, as are also currants. Other lines are regular and without change. We quote: Raisins—Muscatel, loose, new, \$1.75@1.85; do. London, new, \$2.37½@2.40; do. Sultana, 7¼@8c.; do. new Valencia, 6¼@6½c.; do. new Valencia layers, 8c. Almonds—Princess paper shelled, 22@22½c.; Valencia, shelled, 27c.; Jordan, 40c.; Tarragona, 14@14½c.; Ivica, 14c. French sardines, 12@11½c. for quarter boxes and 15@17c. for half boxes. Citron, 18@18½c. Currants, 5½c.; do., to arrive, 5¼@5½c. Figs, 10@15c. Turkey prunes, 3¼@4½c.; do. shipments, 5¼@6c. French prunes, spot, 10¼@11c.; Bohemian prunes, 3c. Grenoble walnuts, 12¼@13c.; French, do., 6@9½c.; Naples do., 13@13½c. Sicily filberts, 7¼@8c. Dates, 5@5½c. for Persian in boxes; 6@6½c. for fards, and 7@7½c. for cases. Brazil nuts, 8c.; Chili walnuts, new, 8¼@9c. In fresh fruits apples are moving fairly at full prices. Grapes rule firm; cranberries are firm and in demand, while Florida oranges sell slowly. In domestic dried evaporated apples rule easy, are in liberal supply and moderate demand. Peaches are in light call. We quote: Apples—Choice to fancy evaporated, 8¼@10c.; common to prime evaporated, new, 7¼@8½c.; sliced, new, 5¼@7½c.; chopped, 2¼@3c.; cores and skins, 1½@2c. Cherries, pitted, 16@20c.; raspberries, evaporated, new, 22@23c.; blackberries, prime, new, 8¼@8½c.; huckleberries, new, 10@11c. Peaches, sun-dried, peeled, new, 15@19c.; Delaware, evaporated, peeled, 28@32c.; Delaware, evaporated, unpeeled, 16@18c.

**Flour and Meal.**—The demand for State, Western and city flour has been fair and the market closed steady. We quote: No grade, \$1.90@2.10; fine, \$2.15@2.75; supers, \$2.40@3.15; extras, No. 2, \$3@3.45; extras No. 1, \$3.40@4.50; clear bakers', \$3.75@4.10; straight bakers', \$4@4.40; patents, \$4.30@5.15; city extras (European), in 140-lb. sacks, \$3.75@3.80; city West Indies, \$4.45@4.50; city patents, \$4.90@5.15. The market for Southern flour rules firm under a good demand. We quote: Fine, \$2.25@2.75; supers, \$2.75@3.10; extras, \$3.25@3.75; Richmond first, \$4.87½; Richmond second, \$4.37½; patents, \$4.50@4.75. The demand for Rye flour is moderate but steady. We quote: Fine, \$2.40@2.65; superfine, \$1.49@3.65. Corn meal is in fair inquiry at full prices. We quote: Western kiln dried at \$2.75@2.95; do. white, \$3.10@3.75; do. Brandywine, \$2.95; do. Western bags, 95c. @1.45.

**Grain.**—In the options wheat has been more active, the market being at times excited. Closing prices were: December, 89¾c.; January, 90¾c.; February, 91¾c.; May, 95¾c.; June, 95¾c.; December, 1888, 98¾c. Cash wheat has been fairly active, but business has been restricted by the extreme views of sellers; closing sales were at 92@92½c. for No. 2 red afloat; spring nominal at about 92c. Corn options have been fairly active, and prices closed at an advance. Final figures were: December, 62¾c.; January, 62¾c.; February, 62¾c.; May, 63¾c. Cash corn has been in fair demand, but sales have been restricted. The market closed at an advance,



No. 2 mixed, afloat, moving at 63@64c. In oats options have moved freely at higher prices. The closing figures were: December, 38½c.; January, 38c.; February, 39c., and May, 40½c. Cash oats have been in fair demand at higher prices. Closing sales were at 41c. for No. 1 white, 38½@39½c. for No. 2, 37½@38½c. for No. 3, 39c. for No. 1 mixed, 37½@38c. for No. 2, 37½c. for No. 3, 36c. for rejected, 35½c. for No. 2 Chicago, 38@39c. for mixed on track, and 39@41c. for white on track.

**Leather.**—The demand for hemlock sole continues on a limited scale and values remain unchanged. Prime grades of Union tanned have been in moderate request at steady prices and there have also been considerable sales of common. We quote: *Hemlock Sole*—Non-acid Buenos Ayres light, first selection, 19½@20c.; middle do., 21@—c.; heavy do., 21@21½c.; light seconds, 18@—c.; middle do., 19@—c.; heavy do., 19@—c.; damaged, all weights, 16@16½c.; common hide, light, first selection, 17@18c.; middle do., 19½@20c.; heavy do., 19½@20c.; light seconds, 16@17c.; middle do., 17½@18c.; heavy do., 17½@18c.; damaged, all weights, 15@15½c.; rejects, 11@12c.; acid hides of all kinds, light, first selection, 17@18c.; middle do., 19½@20c.; heavy do., 20@24c.; light seconds, 16@16½c.; middle do., 17@—c.; heavy do., 18@20½c.; damaged, all weights, 14@15c. *Union Tanned*—Slaughter light backs, 20@30c.; middle backs, 29@30c.; middle backs, heavy, 29@30c.; second backs, 26@27c.; light crop, 25@27c.; middle crop, 25@27c.; crop seconds, 24@25c.; bellies, 12@13c. *Calcutta Buffalo*—Light, 15@16c.; middle, 15@16c.; damaged, 13@14c.; poor damaged, 10@12c.

**Lumber.**—Business is generally small in the lumber market, and the offerings are light and unimportant. Agents and receivers, however, are firm in their views and are not disposed to bids below asking prices. Lath is in fair supply, and with good demand is firmer, closing at \$2.25@2.30. Quotations are: Spruce, random cargo, \$1.10@1.16 per M. feet; do., special cargo, \$1.65@1.18. White pine, South American shippers, per M. feet, \$2.28@2.30; do., West India shippers, \$1.7@1.9; do., box boards, \$1.5@1.8. Yellow pine, random cargo, \$1.9@2.1; do., special cargo, \$2.0@2.2; do., green flooring boards, \$1.8@2.0; do., dry flooring boards, \$2.1@2.3; do., siding, \$2.1@2.4; do., cargoes, f. o. b. Atlantic ports, rough, \$1.3@1.5; do., cargoes, f. o. b. Atlantic ports, dressed, \$1.8@2.0; do., cargoes, f. o. b. Gulf ports, rough, \$1.2@1.4; do., cargoes, f. o. b. Gulf ports, dressed, \$1.9@2.1.

**Metals.**—Pig Iron—American pig has been in about the average movement and transactions are mainly at steady prices. Standard Lehigh brands are quoted at \$21@21.50 for No. 1 X, \$19@19.50 for No. 2 X and \$17@17.50 for gray forge; the less popular makes bring within 50 to 75c. of those figures. Scotch iron has met with only limited sale. Tempting offers have been made of round lots for future delivery, but they were treated with indifference. The store prices are as follows: \$19@19.25 for Eglinton, \$19.50 for Dalmellington, \$20 for Glengarnock, \$20@20.50 for Gartsherrie, \$20.50@20.75 for Summerlee, \$21 for Shotts and \$21@21.55 for Coltness. Bessemer remains very quiet. Foreign is nominal at somewhat between \$19@20. Domestic is quoted at \$19.50@20 in Pittsburgh. Spiegeleisen continues dull and prices are quite nominal. Sellers quote about \$25.50 for German and \$26@26.50 for English 20 per cent., \$31 for 30 per cent. and \$21.75 for do. 10 to 12 per cent. There is not the slightest improvement in the demand for old rails. Very few lots have arrived, and holders of stock in store make no special efforts to sell. Prices are nominal at \$21 for tees and \$21.50 for double heads. Scrap iron is still neglected; yard lots of No. 1 wrought sell at \$20.50@21, and shop lots would not bring within \$1 of those figures. About \$21 is still named for crop ends, \$26 for fish plates and \$19 for car-wheels. Copper—The copper market has been under a great deal of excitement and under aggressive work of a syndicate prices have advanced. Prices for Lake ingot have been moved almost steadily upward in the local market, and sales were made at 15.60c. for current month delivery. The trading is becoming less extensive in volume, with but little buying except by supposed agents and followers of the syndicate. Late sales have been at 14.85@15.25c. spot, 14.95@15.60c. for December, 15.00@15.75c. for January, 15.10@15.25c. for February, 15.25c. for March and 15@15.20c. for May. These prices show an advance of .35@.50c. for the last three days. Pig Tin—There has been a moderate volume of business and closing transactions have been at 34.35c. for spot, 33½@33¾c. for January and 32.10@32.15c. for February. Tin plates are again higher and closing figures were: Charcoal, ½ cross assortment, Melyn grade, \$6.25, each additional X add \$1.50; I. C. charcoal, ½ cross assortment, Allaway grade, \$5.12½, each additional X add \$1.50; charcoal terne, M. F. grade, 14x20, \$6.75; M. F. grade, 20x28, \$13.50; Worcester, 14x20, \$4.87½; Worcester, 20x28, \$9.37½; Dean grade, 14x20, \$4.45@4.65; Dean grade, 20x28, \$8.90; Allaway grade, 14x20, \$4.35; Allaway grade, 20x28, \$8.70. I. C. coke—B. V. grade, \$4.85; J. B. grade, 14x20, \$4.90. I. C. Bessemer steel, squares, \$4.95 basis; I. C. Siemens steel, squares, \$5 basis. Lead has again advanced under the speculative demand and the restriction of offerings. Closing sales were at 4.65@5c. for spot, 4.85@5.15c. for December, 4.95@5.25c. for January and 5.25c. for February. Spot stock was quoted at 5½@5½c. at the close.

**Molasses.**—There has been a moderate trade demand for grocery descriptions, but sales of round lots are very few. We note sale of Sagua, new crop, January to May delivery, at 23c. for 50° test. New Orleans is fairly active and supplies are moving readily at 45c. for choice and 48c. for fancy. Sugar-house is dull and nominal. Syrups are in good export demand for straight sugar grades, and with available stock nearly absorbed the market has ruled firm. Common to fine is moving at 22@28c. and fancy 32@40c. We quote: Cuba, boiling, —@—c.; Porto Rico, 25@38c.; Barbadoes, 23@28c.; New Orleans, common to fair, —@—c.; do., good to prime, 40@43c.; do., strictly prime to choice, 45@47c.; do., fancy, 48c.

**Naval Stores.**—Spirits of turpentine have been in fairly steady demand and the market closed firm at 37c. Rosins have been in moderate demand and prices are without important change. We quote: Common, \$1; strained, \$1.05; good, do., \$1.07½; E, \$1.27½; F, \$1.35; G, \$1.45; H, \$1.50; I, \$1.57½@1.62½; K, \$1.70; M, \$1.90; N, \$2.20; window glass, \$2.85, and W W, \$3.35.

**Paper.**—The executive committee of the Light Straw Wrapping Association has again advanced prices from 2@10c. a ream, and the new schedule goes into effect December 1. News is very active, all mills being busy, and prices firm but not

higher. Writings are in good demand and steady, as is book. Manillas have gone off ¼c. with two leading makers. Strawboards are moving at combination prices. We quote: Fine flat caps, 13@15c.; superfine, 16@17c.; record and ledger, 18@22c.; super sized and calendered book, 7@8½c.; do. do., extra machine finish, 7@7½c.; do. do., low grade, 6½@7½c.; news, No. 1, 5c.; do., rag and wood, 4½@5c.; do., straw, 5½@5½c.; manillas, No. 1, light weight, 7½@8c.; do., heavy weight, 7@7½c.; No. 2 manillas, 5@6c.; bogus do., 2½@3c.; straw wrapping, heavy weight, 1½@2c.; do. do., light weight, 2.90c.

**Petroleum.**—Certificates have been showing quite a decided upward movement, closing at 76@76½c. Refined is not in urgent call, but prices are steady at 7c. for 70° Abel test. Case oil is in moderate demand, with the market firm at 9c. for plain brands. Crude oil in barrels is quoted at 6½c. for Bradford and 6¼c. for Parker. Prime city naphtha is quoted at 7¼c. Home trade lots barreled oil quoted at 7½c. for 110° test standard white; 7½c. for 120° test do.; 7½c. for 130° test do.; 8¼c. for State test do., and 8½c. for 150° test water white.

EXPORTS OF REFINED, CRUDE AND NAPHTHA, FROM ALL PORTS, JANUARY 1 TO NOVEMBER 30.

	1887.	1886.
From Boston.....gals.	3,675,850	5,266,642
Philadelphia.....	149,645,750	138,361,181
Baltimore.....	7,119,851	14,208,859
Perth Amboy.....	5,495,727	5,648,102
Totals.....gals.	175,847,178	163,484,784
From New York.....	339,637,302	358,045,652

Total exports from United States.....gals. 515,484,480 521,530,436

**Provisions.**—Lard has been active, and options closed at an advance. "Cash" is more active, chiefly on export demands. We note sales of Western steam prompt and early delivery at 7.75@7.87½c. City steam has likewise advanced and closed strong at 7.59c. Refined is quiet, closing at 7.85c. for Continent and 8c. for South American. In pork Western markets advanced, but lack of speculation caused a loss. Spot quotations here are as follows: Old mess, \$14.50; new mess, \$15.25@15.75; short clear, \$15.75@17; extra prime, \$12.50@12.75; prime mess, nominal, and family mess, \$15.25@17.25. Middles—For actual stuff as wanted bids are advanced from exporters, but packers want even more money, and trading is limited. It would be difficult to buy short clear under 8c. Speculation in short ribs is active at higher prices. Short ribs were sold for January option from 7.72½@7.75c.; for February option at 7.82½@7.87½c.; March at 7.92½@7.97½c. Beef—Trading is limited to small lots on home account. No change made in prices. Quotations are: City extra India mess in tierces at \$13@15; extra mess in barrels at \$8@8.25; packet at \$8.50 per barrel and \$12.75 in tierces; plate at \$8@8.25; family at \$9@9.50.

**Starch.**—There has been a fair demand for Western corn and prices are unchanged. We quote 2½c. for bbls. and 2½c. for bxs. Potato is quiet at 4½@4½c. for foreign and 5@5½c. for domestic.

**Stearine.**—The market is quiet but firmer. We quote: Western, 7½c.; city, 8½@8½c. and oleomargarine at 6½c.

**Sugar.**—Raw—The market is very quiet and refiners show not the least disposition to take fresh supplies. Holders have not modified their views, and are firm on quotations. Values are nominally quoted: 5½c. for 80 test Mucovados, and 5½c. for 90 test centrifugals. Beet is neglected. Refined—There is a fairly active demand, which pretty well absorbs the supply, which is closely sold up. The market closed strong. We quote for export, less drawbacks: Cut loaf, \$5.06; cubes, \$4.31@4.33; crushed, \$5.06; powdered, \$4.31@4.35; granulated, \$4.18@4.31.

**Tea.**—Trade is in fair condition, and the market is firm as to attractive samples, holders apparently making no effort to realize. At the closing auction sale there were large offerings, and the bidding was active and satisfactory. Greens generally were steady, Japan well sustained, Amoy and Congous rather easier, while Formosas were irregular, but on the whole pretty strong. The actual figures were: Moyune hyson at 11½@14½c.; young hyson at 8½@42c.; imperial at 10½@23½c., and gunpowder at 12½@41c. Pingsuey young hyson at 9½@17c.; imperial at 14@19½c., and gunpowder at 10½@26c. Japan, pan-fired at 13@20c.; basket-fired, at 12@28c.; siftings at 4@6c. Congou at 11@21½c., and India at 19@26c. Oolong, Foochow at 20@29½c.; Formosa at 19½@45c., and Amoy at 13@15c.

**Tobacco.**—Kentucky meets with moderate attention, though full prices are obtained. We note additional sales of 300 hogsheds within our range. Quoted: Common lugs, 4½@5½c.; good, 5@7c.; low leaf, 6½@8½c.; good, 9@11½c., and fine, 10½@16c. Virginia grades continue dull, but indicate no change. We quote 7c. for common to good lugs, 7½@9½c. for common to medium leaf, 10½@11½c. for medium to good dark do., and 12@13c. for good to fine dark do.; common to medium bright wrappers, 21@24c.; fair to good, 25@35c.; fine do., 35@50c.; common smokers, 6@10c.; good do., 12@15c.; fine cutters, 22½@27½c. Seed continues in fair demand and steady. Sales: 1886 New England Havana at 13@35c.; 1886 New England, 12@16c.; 1886 Dutch, 9½c.; 1886 Zimmer's on p. t.; 1886 State Havana, 8@16c., and sundries, 7@28c. Foreign continues in fair demand and steady. Sales: 250 bales Havana at 60c.@\$1.10, and 150 do. Sunatra at \$1.40@1.70.

#### STOCK OF SPANISH TOBACCO.

	Havana.	Cuba.	Sagua.	Cienfuegos.	Yara.
Stock November 1, 1887...bales.	38,429	157	....	....	1,102
Received since.....	8,680	....	....	76	190
Totals.....bales.	47,109	157	....	76	1,292
Delivered since.....	7,812	75	....	....	100
Stock December 1, 1887...bales.	39,297	82	....	76	1,192

**Wool.**—There is a moderate demand in the wool market, and prices are without important change. Stocks are held steady, and there is nowhere any disposition to force sales. Late sales comprise: X and XX Ohio, 32@33c.; X do., 32c.; No. 1, 37c.; Territory, 18@23c.; Eastern Oregon, 19@24c.; also fine scoured spring Texas, fine medium unwashed Iowa, scoured California, super pulled, A lambs' do., extra do., scoured, Territory in the grease, do. black scoured, domestic noils, East India, Persian and Montevideo on private terms.



**Exports of Domestic Merchandise (Values Stated) from all Ports of the United States for the Month Ended October 31, 1887.**

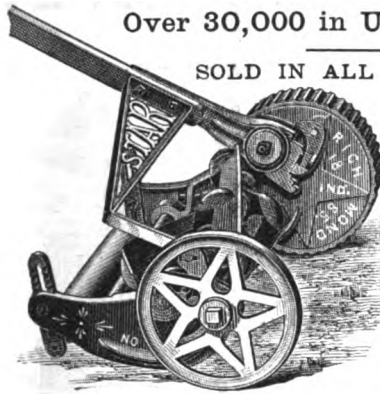
<b>Agricultural implements—</b>		<b>Fruits, preserved—</b>		<b>Oils—</b>	
Horse-powers.....	\$645	All other, green, ripe or dried.....	24,081	Vegetable—Cotton seed.....	49,137
Mowers and reapers, and parts of.....	27,781	Nuts.....	1,330	Linseed.....	4,040
Plows and cultivators, and parts of.....	32,617	Furs and fur-skins.....	183,768	Volatile or essential.....	40,554
All other, and parts of.....	58,272	Glass and glassware—		Other.....	4,482
<b>Animals—</b>		Window glass.....	637	Ore, gold and silver bearing.....	10,700
Cattle.....	645,763	All other.....	76,755	Paints and painters' colors.....	56,411
Hogs.....	18,432	Glucose or grape sugar.....	13,749	Paper, and manufactures of—	
Horses.....	28,157	Glue.....	4,492	Paper-hangings.....	1,377
Mules.....	89,520	Grease, grease scraps and all soap stock.....	102,664	Writing-paper and envelopes.....	14,796
Sheep.....	17,482	Gunpowder and other explosives—		All other.....	6,263
All other, and fowls.....	3,620	Gunpowder.....	23,989	Paraffine and paraffine wax.....	10,186
Art works: paintings and statuary.....	19,270	All other.....	47,346	Plated ware.....	64,719
Bark, and extract of, for tanning.....	25,821	Hair, and manufactures of.....	31,831	Provisions, comprising meat and dairy products—	
Billiard and pool tables and apparatus.....	981	Hay.....	23,753	Meat products—Beef products—	
Blacking.....	18,829	Hides and skins, other than furs.....	53,692	Beef, canned.....	365,980
Bones, hoofs, horns and horn tips, strips and waste.....	13,188	Honey.....	316	Beef, fresh.....	777,066
Books, maps, engravings, etchings and other printed matter.....	148,911	Hops.....	439,249	Beef, salted or pickled.....	289,659
Brass, and manufactures of.....	35,972	Ice.....	9,981	Beef, other cured.....	1,704
<b>Breadstuffs—</b>		India-rubber and gutta-percha, manufactures of—		Tallow.....	304,304
Barley.....	16,837	Boots and shoes.....	8,846	Hog products—	
Bread and biscuit.....	50,965	All other.....	68,338	Bacon.....	2,024,360
Corn.....	1,285,793	Ink, printer's and other.....	13,964	Hams.....	299,463
Corn meal.....	66,937	Instruments and apparatus for scientific purposes, including telegraph, telephone and other electric.....	48,173	Pork, fresh.....	
Oats.....	13,356	Iron and steel, and manufactures of—		Pork, pickled.....	447,385
Oatmeal.....	16,940	Iron ore.....	1,302	Lard.....	1,057,434
Rye.....	445	Pig iron.....	18,972	Mutton.....	203
Rye flour.....	2,326	Band, hoop and scroll iron.....	61	Oleomargarine—	
Wheat.....	2,928,833	Bar iron.....	4,468	Imitation butter.....	12,418
Wheat flour.....	4,583,628	Car-wheels.....	14,390	The oil.....	283,511
All other breadstuffs, and preparations of, used as food.....	75,335	Castings, n. e. s.....	29,699	Poultry and game.....	593
<b>Bricks—</b>		Cutlery.....	40,941	All other meat products.....	12,157
Building.....	7,775	Firearms.....	1,372	Dairy products—	
Fire.....	3,954	Ingot, bars and rods of steel.....	136,410	Butter.....	157,479
Broom corn.....	36,688	Locks, hinges, and other builders' hardware.....	553,740	Cheese.....	652,336
Brooms and brushes.....	13,000	Machinery, n. e. s.....	49,140	Milk.....	27,206
Candles.....	12,934	Nails and spikes.....	372	Quicksilver.....	395
Carriages and horse-cars, and parts of.....	152,454	Plates and sheets—		Rags.....	1,103
Cars, passenger and freight, for steam railroads.....	64,691	Of iron.....	3,056	Salt.....	2,808
Casings for sausages.....	118,600	Of steel.....	669	Seeds—	
Chemicals, drugs, dyes and medicines—		Printing-presses, and parts of.....	14,850	Clover.....	226,831
Acids.....	6,138	Railroad bars or rails—		Cotton.....	2,739
Ashes, pot and pearl.....	654	Of iron.....	372	Flaxseed or linseed.....	
Dyes and dyestuffs.....	111,170	Of steel.....	136,161	Timothy.....	20,080
Ginseng.....	66,551	Saws and tools.....	27,088	All other.....	28,261
Medicines, patent or proprietary.....	129,950	Scales and balances.....	186,360	Silk, manufactures of.....	6,692
Roots, herbs and barks, n. e. s.....	9,581	Sewing machines, and parts of.....		Soap—	
All other.....	252,396	Steam-engines, and parts of—		Toilet or fancy.....	3,469
<b>Clocks and watches—</b>		Fire engines.....	80,590	All other.....	90,008
Clocks and parts of.....	132,336	Locomotive engines.....	18,617	Spermaceti and spermaceti wax.....	20,465
Watches, and parts of.....	24,387	Stationary engines.....	28,444	Spices, ground or prepared.....	4,590
<b>Coal—</b>		Boilers and parts of engines.....	27,419	<b>Spirits—</b>	
Anthracite.....	412,870	Stoves and ranges, and parts of.....	30,799	Alcohol.....	9,971
Bituminous.....	188,124	Wire.....	226,533	Pure, neutral, or cologne spirits.....	27
Coffee and cocoa, ground or prepared, and chocolate.....	6,888	All other manufactures of iron and steel.....		Rum.....	7,901
<b>Copper, and manufactures of—</b>		Jewelry, and manufactures of gold and silver.....	47,862	Whiskey.....	9,530
Ore.....	384,114	Lamps, chandeliers and all devices and appliances for illuminating purposes.....	52,116	Bourbon.....	10,004
Ingot, bars, and old.....	71,435	Lead, and manufactures of.....	8,302	Rye.....	4,060
Sheets.....	190	Leather, and manufactures of—		All other.....	304,775
All other manufactures of.....	8,470	Leather—		Spirits of turpentine.....	20,454
<b>Cotton, and manufactures of—</b>		Ruff, grain, splits, and all finished upper leather.....	223,474	Starch.....	6,595
Unmanufactured—		Patent or enameled.....	6,043	Stationery, except of paper.....	6,595
Sea Island.....	71,420	Sole.....	502,609	Stereotype and electrotype plates.....	20,454
Other.....	37,359,197	All other.....	52,179	Straw and palm leaf, manufactures of.....	7,906
Manufactures of—		Manufactures of—		Sugar and molasses—	
Cloths, colored.....	370,016	Boots and shoes.....	66,654	Molasses and syrup.....	35,087
Cloths, uncolored.....	650,638	Harness and saddles.....	20,642	Sugar, brown.....	62
Wearing apparel.....	21,481	All other.....	32,184	Sugar, refined.....	99,006
All other.....	162,013	Lime and cement.....	10,285	Candy and confectionery.....	18,198
<b>Earthen, stone and china ware—</b>		Malt liquors—		Tin, manufactures of.....	18,398
Earthen and stone ware.....	17,720	In bottles.....	56,961	Tobacco, and manufactures of—	
China ware.....	1,959	Not in bottles.....	3,866	Unmanufactured—	
Eggs.....	2,148	Marble and stone, and manufactures of—		Leaf.....	2,216,743
<b>Fancy articles—</b>		Unmanufactured.....	21,556	Stems and trimmings.....	40,031
Perfumery and cosmetics.....	37,858	Manufactures of—		Manufactures of—	
Toys.....	13,583	Roofing slate.....	6,797	Cigars.....	2,476
All other.....	48,854	All other.....	28,444	Cigarettes.....	58,606
<b>Fertilizers.....</b>	87,718	Matches.....	5,782	All other.....	248,538
<b>Fish—</b>		Musical instruments—		Umbrellas, parasols and sunshades.....	50
Fresh, other than salmon.....	240	Organs.....	54,775	Varnish.....	14,776
Dried, smoked or cured—		Pianofortes.....	28,015	<b>Vegetables—</b>	
Codfish, including haddock, hake and pollock.....	56,657	All other, and parts of.....	11,442	Beans and peas.....	43,237
Herring.....	4,119	Naval stores—		Onions.....	7,541
Other.....	9,247	Rosin.....	171,572	Potatoes.....	57,057
Pickled—		Tar.....	1,880	Vegetables, canned.....	48,511
Mackerel.....	9,011	Turpentine and pitch.....	6,274	All other, including pickles.....	17,997
Herring.....	817	Oakum.....	4,246	<b>Vessels sold to foreigners—</b>	
Other.....	7,769	Oil-cake and oil-cake meal.....	505,047	Steamers.....	
Salmon—Canned.....	193,614	<b>Oils—</b>		Sailing vessels.....	350
Other.....	5,140	Animal—		Vinegar.....	676
Canned fish, other than salmon.....	8,312	Lard.....	44,321	Wax, bees'.....	3,669
Shell fish—		Sperm.....	4,079	Whalebone.....	121,260
Oysters.....	36,768	Other whale and fish.....	18,315	Wine—	
Other.....	29,283	Other.....	44,060	In bottles.....	4,139
All other fish.....	9,016	Mineral, crude, including all natural oils, without regard to gravity.....	592,251	Not in bottles.....	11,260
<b>Flax, hemp and jute, manufactures of—</b>		Mineral, refined or manufactured—		<b>Wood, and manufactures of—</b>	
Bags.....	24,323	Naphthas, including all lighter products of distillation.....	242,104	Firewood.....	6
Cordage.....	73,915	Illuminating.....	3,081,825	Lumber—	
Twine.....	6,022	Lubricating and heavy paraffine oil.....	395,688	Boards, deals and planks.....	486,140
All other.....	12,832	Residuum, including tar and all other, from which the light bodies have been distilled.....	198	Joists and scantling.....	11,631
<b>Fruits, including nuts—</b>				Hoops and hoop-poles.....	4,149
Apples, dried.....	100,407			Laths.....	489
Apples, green or ripe.....	304,609			Palings, pickets and bed-slats.....	927
<b>Fruits, preserved—</b>				Shingles.....	4,301
Canned.....	129,839			Shooks—	
Other.....	3,023			Box.....	8,074
				Other.....	86,738
				Staves and headings.....	190,775
				All other lumber.....	110,740



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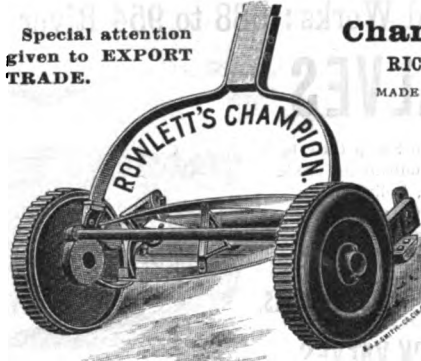
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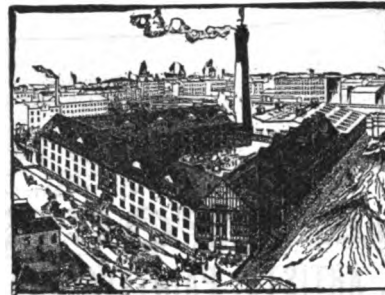
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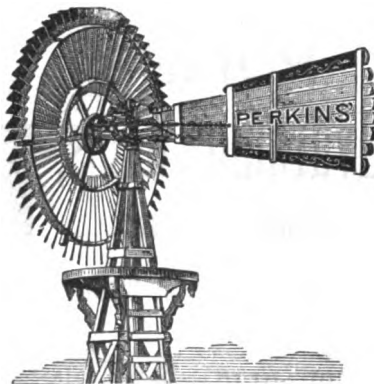
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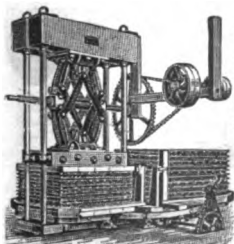
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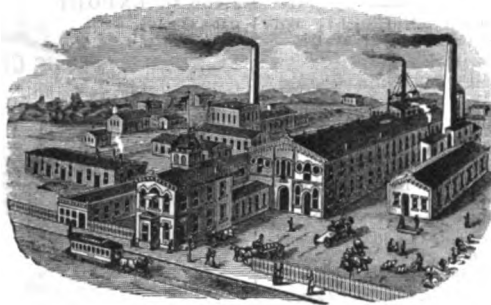


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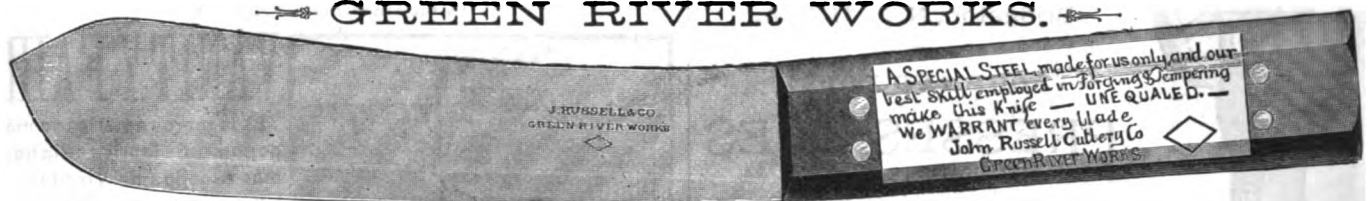
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NEW YORK, JULY, 1887.

THE AMERICAN MAIL AND EXPORT JOURNAL is a medium for communication between American Manufacturers and Exporters, and the Foreign Trade. It is represented abroad by experienced agents, and is circulated among merchants and manufacturers, and all others prominently engaged in commercial or industrial pursuits throughout the world.

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Argentine Republic.	Peso = 100 centavos.	\$	.96,5
Austria.	Florin = 100 kreutzers.	Fl.	.37,1
Azores.	Milreis = 1,000 reis.	Rs.	.83,5
Belgium.	Franc = 100 centimes.	Frs.	.19,3
Bolivia.	Boliviano = 10 reales.	\$	.75,1
Brazil.	Milreis = 1,000 reis.	Rs \$	.54,6
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China.	Tael = 10 mace.	Tael.	1.20
Cuba.	Peso = 100 centavos.	\$	.93,2
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Ecuador.	Peso = 100 centavos.	\$	.75,1
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Italy.	Lira = 100 centesimi.	L.	.19,3
Japan.	Yen = 100 sen.	Yen	.81,0
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Madeira.	Milreis = 1,000 reis.	Rs. \$	1.00
Mexico.	Peso = 100 centavos.	\$	.81,6
Netherlands.	Florin = 100 cents.	Fl.	.40,2
Norway.	Krone = 100 ore.	Kr.	.26,8
Paraguay.	Peso = 100 centavos.	\$	1.00
Peru.	Sol = 100 centavos.	\$	.75,1
Porto Rico.	Peso = 100 centavos.	\$	.92,5
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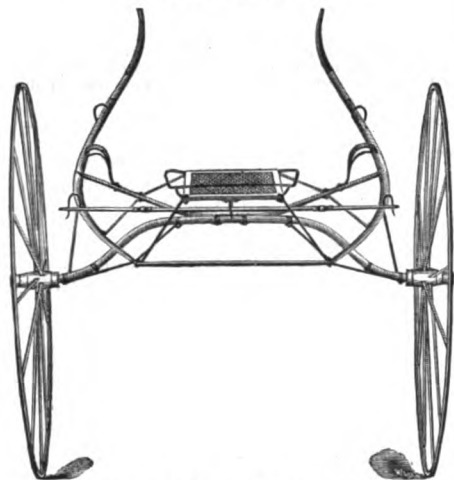
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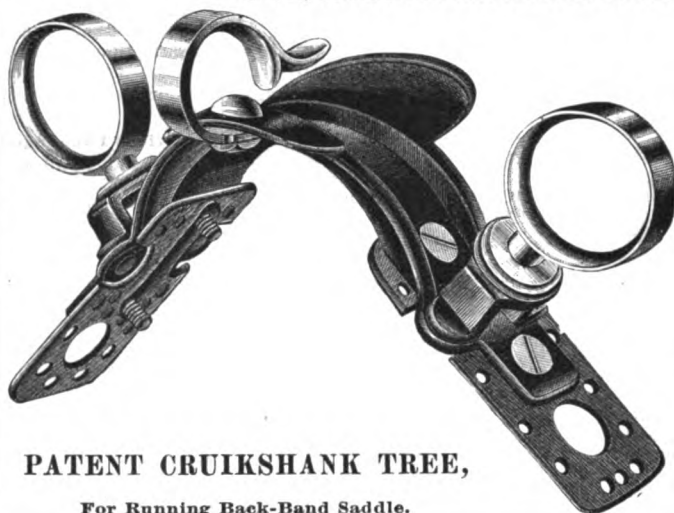
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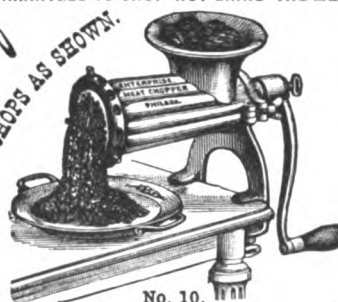
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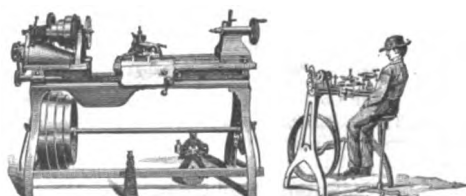
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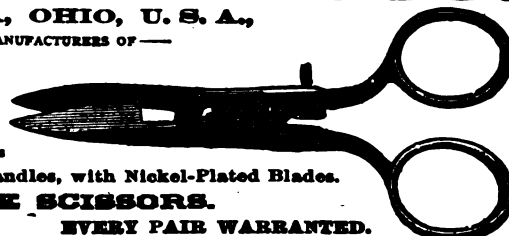
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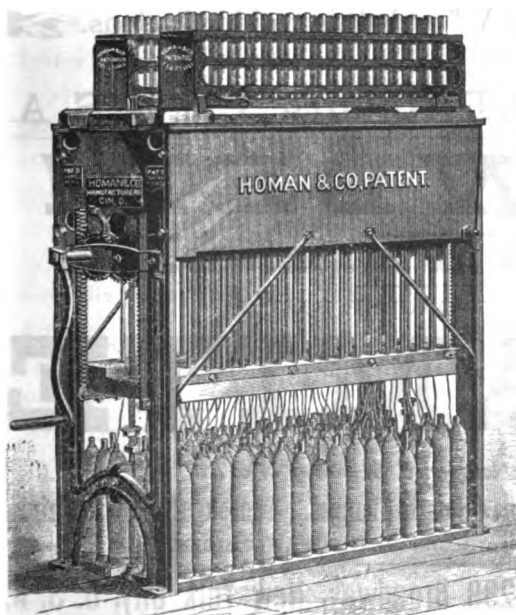


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The best made, all steel, and warranted. Eight sizes.  
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## THE BRITISH PARLIAMENT AND HALL-MARKING.

**I**N the House of Commons on March 4, Mr. Kimber asked the Secretary to the Board of Trade whether his attention had been called to the case of Messrs. Robbins & Appleton, agents in this country of the Waltham Watch Manufacturing Company, who, having an order for Australia for 400 Waltham Railway watches, and having the movements in their possession and desiring to have them cased in this country, un-hallmarked, but, in American style, marked "Sterling  $\frac{985}{1000}$ ," applied to the Goldsmiths' Company for permission to have the order executed; whether such permission was refused on the ground that it was illegal for any watch-case manufacturers in the United Kingdom to be exempted from the compulsory obligation of assay and hall-marking; whether, as a consequence, the order had to be executed in America, to the loss of English watch-case makers of an order for 400 cases, and an estimated loss of 10,000 cases per annum; whether Her Majesty's Government would consider the expediency, in the interest of British industry, of abolishing the compulsory obligation of assay of watch-cases manufactured in the United Kingdom for export abroad; whether he was aware that parts of the works of watches are made abroad and put together sometimes with other parts made in this country, and that the Merchandise Marks Act (1862) Amendment Bill makes no provision for such cases, and whether the government intended to introduce any amendments to apply to them, and, if so, how they will be dealt with.—*London Daily Chronicle*, March 5, 1887.

John Bull suffers from the so-called Hall-Mark laws in more than one way. Silver goods generally have to be marked at some little cost for stamping. But the expense to the trade is not that trifling payment alone. For the trouble of sending the unfinished goods to the hall-marking office, the damage likely to be done to them through stamping and the delay incurred thereby are items that do count. However, this is the least of the grievances caused by the hall-mark law, for Great Britain lives chiefly on her export—and she necessarily exports a great deal to countries where the hall-mark is considered no better than the guaranty stamp of reliable manufacturers, and where people do not care to pay for the obsolete stamp tax levied in John Bull's own isle. There's the rub. The *Waltham* stamp, which goes annually on something like 300,000 gold and silver cases, means  $\frac{985}{1000}$  fine if it is accompanied by the word *sterling*, and  $\frac{900}{1000}$  fine if accompanied by the word *coin*. The Waltham Company alone turns out 80 per cent. more watches annually than all Great Britain together, for, according to the *London Times*, the total watch product of Great Britain in 1883 was only about 200,000, while the Waltham Company furnish fully 1,200 daily, or 360,000 watches per annum. The interest which this great company has at stake is, therefore, greater than what all Parliament has to deal with in this particular instance. And the fact goes without saying, that no manufacturer can live unless he makes his goods up to the standard represented by him.—*New York Jewelers' Circular and Horological Review*.

## THE WALTHAM CHRONOGRAPH.

**T**HE WALTHAM Chronograph is above all a thoroughly reliable timekeeper, and its mechanism to start, stop and fly back is of the simplest and most durable construction. While it is in every respect a fine and accurate watch, it is decidedly not a frail one, neither is it more liable to accidents than the plainest watch made. A notable feature of the Waltham Chronograph is that all its parts are on the top plate, freely exposed to view, showing at once that it is not a complicated watch. It is likewise important to the watchmaker that the fifteen or twenty pieces which make up the chronograph attachment proper can be easily examined without taking the watch down, and duplicates of any of these may at all times be obtained like all other Waltham watch materials. In case the chronograph attachment requires taking down, the regular timekeeping parts need not be disturbed.—*New York Jewelers' Circular and Horological Review*.

## GOOD WATCHES FOR LADIES.

**F**OR A NUMBER of years this country has been flooded with European chatelaine watches for ladies, the chief attraction of which was their low price. No quality at all was claimed for the movements, and they might as well have gone on the market with dial and hands only. Of course no guarantee went with these watches, and the poor woman who depended on one of them for time surely "got left." We are glad to know that there is now a ladies' watch made in this country extremely low in price, with a guaranteed "Anchor" movement in which the fullest reliance may be placed. Its case is made of an aluminine alloy of great whiteness and lustre that wears much better even than silver. It is ornamented with a gold bezel and an encrusted gold shield, and is of extreme lightness of weight. We should say that it looks neater than any ladies' watch we have ever seen, and dealers who believe in the adage that "ladies are friends indeed" can serve them no better than by offering these beautiful little American timekeepers in the place of the cheap European chatelaines which it is almost a disgrace to handle. The price of the Waltham Aluminine Anchor watch is pitched very low indeed.—*Providence Manufacturing Jeweler*.



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FOR BURNING KEROSENE, OIL OR PETROLEUM.

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All correspondence may now be addressed to the Factory Office of THE HITCHCOCK LAMP CO., Watertown, New York, U. S. A.

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It will stand a sudden blast of wind, and burn equally well in warm or cold climates; do not be deceived by any other lamp; see that Hitchcock's Patent stamped on every Lamp.

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PATENTE DE HITCHCOCK,

PARA KEROSENO, ACEITE Ó PETRÓLEO.

LA ÚNICA SIN TUBO DE TODA CONFIANZA. ARDE OCHO HORAS SIN VOLVER A DARLE CUERDA.

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ROBT. HITCHCOCK, Vice-Presidente y Secretario.

J. W. MOAK, Tesorero.

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Se les da cuerda á nuestras lámparas en el fondo y la llave se halla asegurada á la maquinaria, con lo que se evitan pérdida ó quebradura. Esta lámpara tiene gran éxito en todas partes del mundo, habiéndose usado ya millares de ellas dando la mayor satisfacción.

El adjunto grabado muestra una de muchas. Se genera la combustión por medio de un abanico, tiene movimiento de reloj que hace funcionar éste y fuerza el aire á que penetre en la llama produciendo una hermosa luz blanca estable de diez y seis velas de intensidad. Resiste á un repentino soplo de viento y arde igualmente bien en climas cálidos ó fríos. No se dejen engañar por otras lámparas; véase que lleve la marca: Patente de Hitchcock.

Suplicamos repetuosamente á los negociantes en lámparas envíen sus firmas y direcciones para que se les encaminen catálogos y listas de precios. Sirvanse añadir referencias.



This cut shows only one of many.

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PATENTE DE HITCHCOCK,

PARA KEROSENO, AZEITE OU PETRÓLEO.

A ÚNICA FIDEDIGNA SEM TUBO. ARDE OITO HORAS SEM DAR-LHE CORDA DE NOVO.

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Para mais esclarecimentos e condições dirigir-se ao escriptorio da fábrica, THE HITCHCOCK LAMP CO., Watertown, New York, U. S. A.

Sem Globo. Sem Tubo. Sem substituto por ambos. Sem Fumo. Sem Olor. Sem Perigo. Inexplosivel. Este cliché representa uma de muitas.

Se lhes da corda no fundo e a chave, assegurada ao machinismo, impede perda e quebra.

Tem tido grão éxito em toda a parte, dando satisfação geral.

Criase a combustão mediante um abanico trabalhado por endentação que força o ar na chamma, produzindo uma formosa luz branca estável igual a deseseis bugias. Resiste a um repentino soplo de vento. Arde igualmente bem em climas quentes ou frios. Resguardar-se contra as imitações, estando estampada cada lampada: Patente de Hitchcock.

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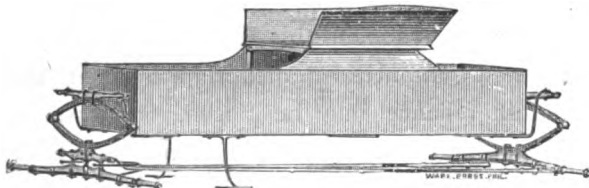
## J. L. SPENCER & CO., Oneida, Madison Co., N. Y.,

— MANUFACTURERS OF —

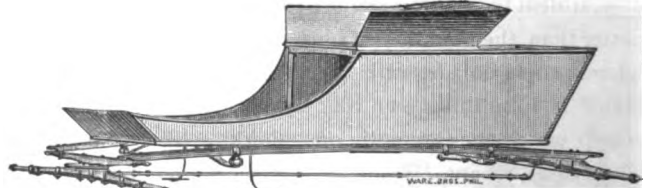
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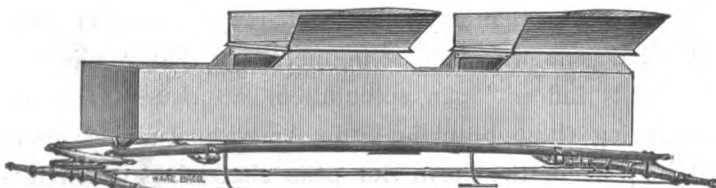
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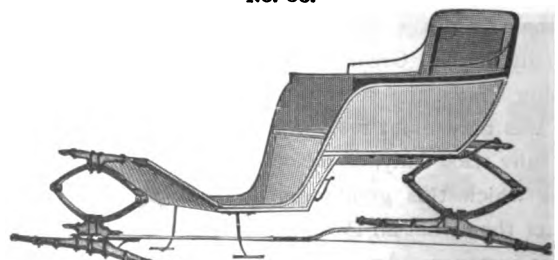
No. 35.



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No. 19.



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Acting under special instructions from American manufacturers, the undersigned is in a position to make the most favorable arrangements with firms in good standing who are ready to take the agency of certain specialties, and push the sale of same.

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We are also putting the "CHESHIRE" into 10-K. **GOLD FILLED CASES** which are a marvel of beauty, making practically a good **Reliable Gold Watch** at a price within reach of all. **Every Watch Fully Warranted.**

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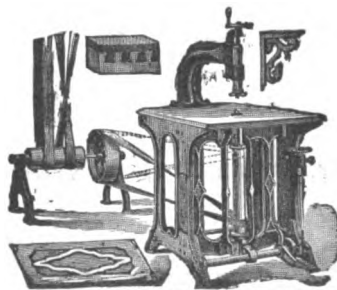
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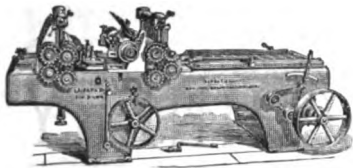
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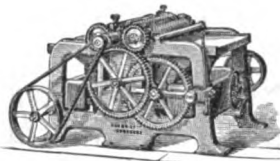
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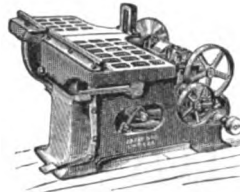




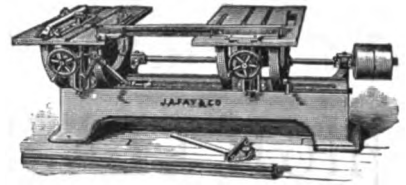
No. 2½.—Pacific Planer and Matcher.



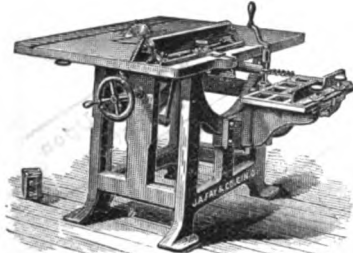
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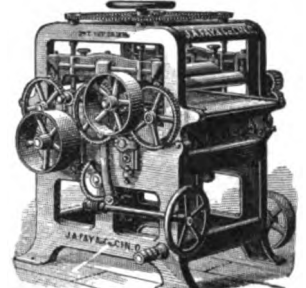
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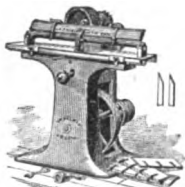
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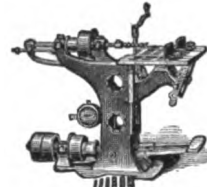
D. L. LYON, Sec'y.



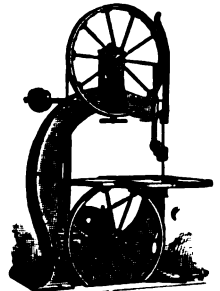
No. 2.—Scroll Saw.



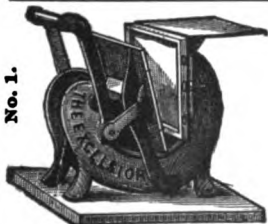
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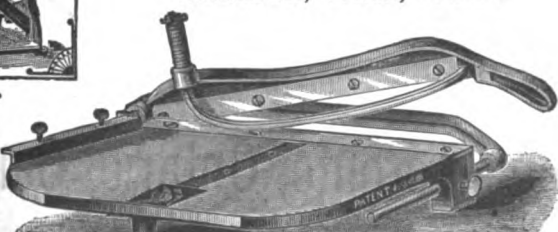
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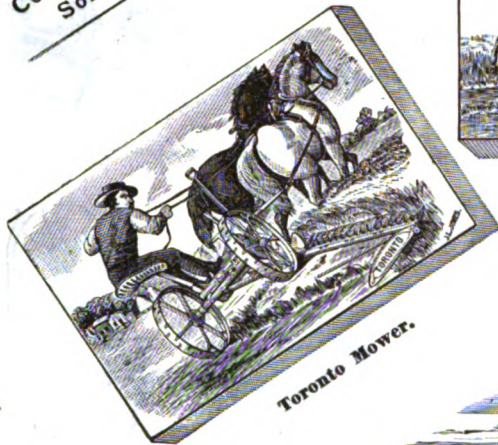
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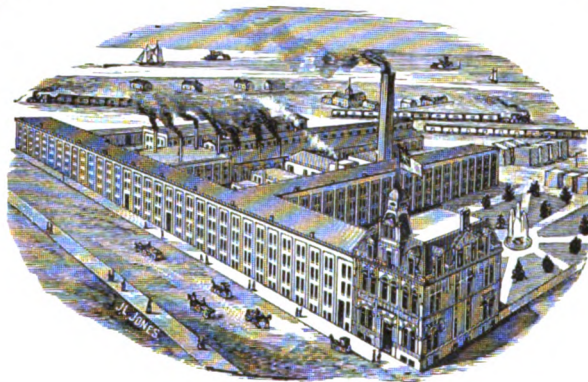


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Catalogue Upon  
Application.



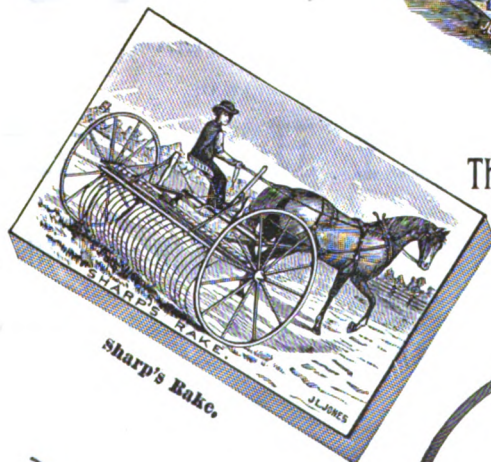
Massey Mower.



OFFICES AND WORKS OF  
**The Massey Manufacturing Co.**

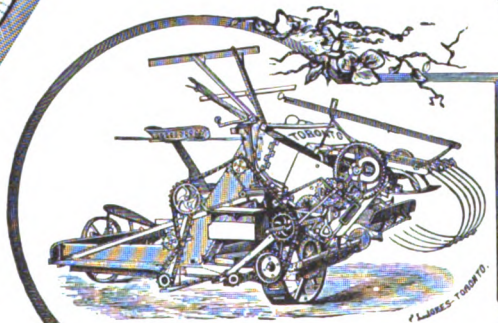
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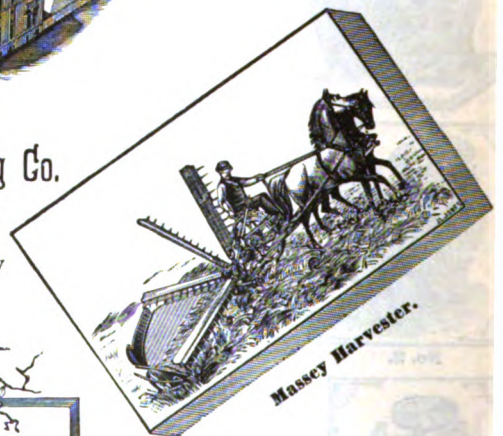


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Massey Harvester.

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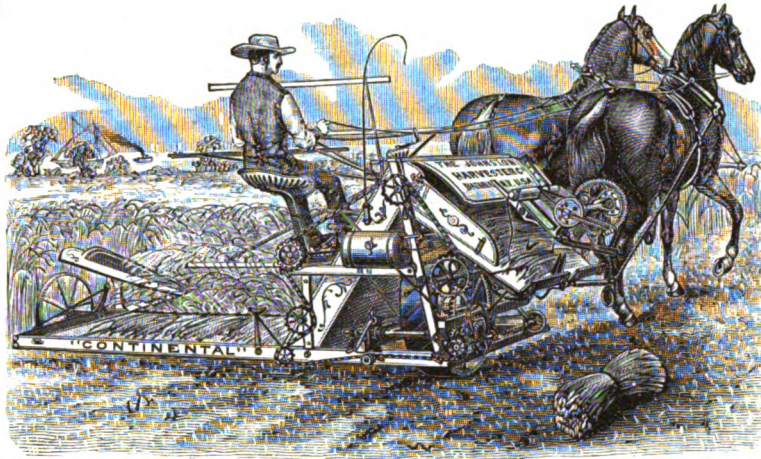
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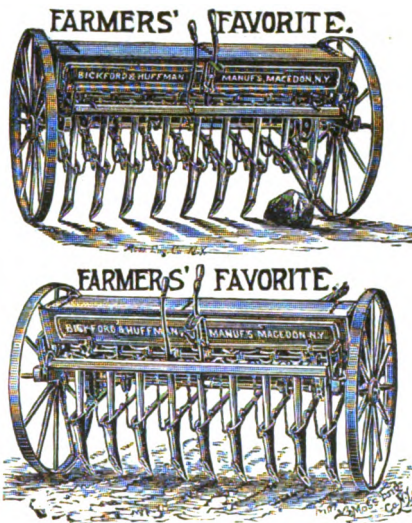
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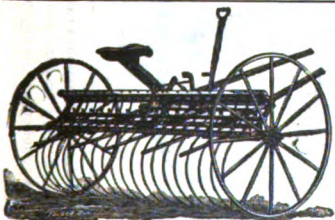
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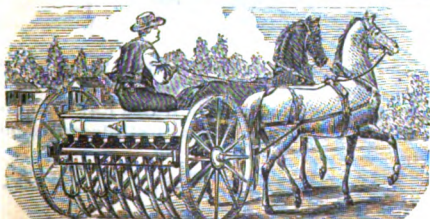
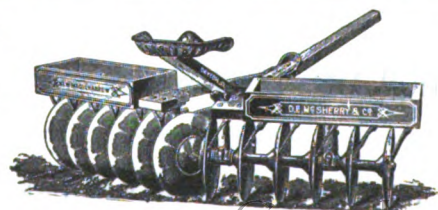
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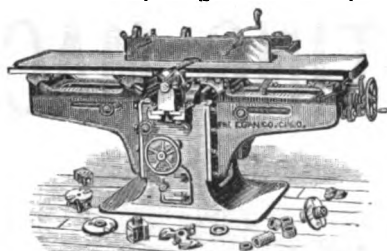
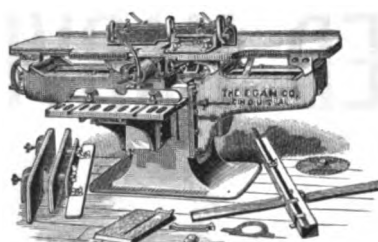
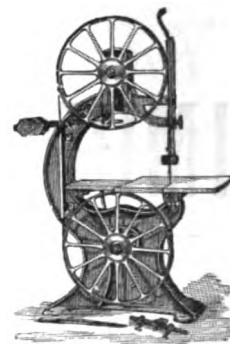
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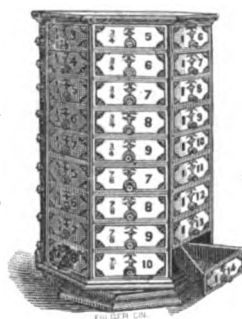
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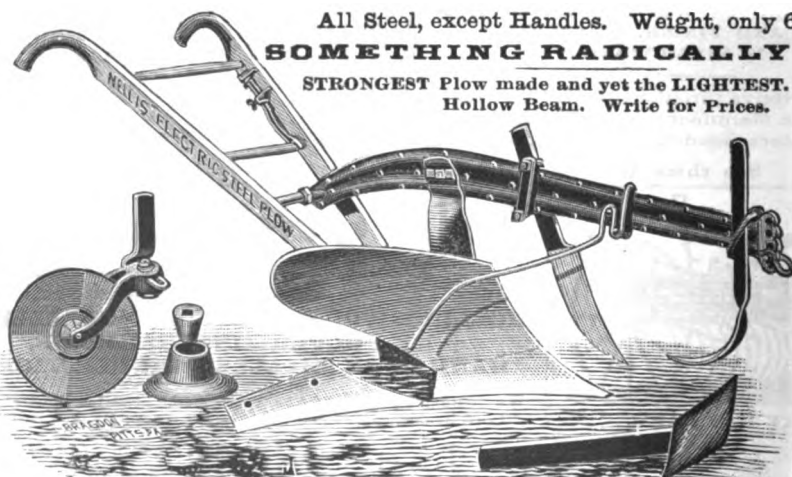
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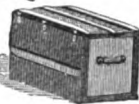
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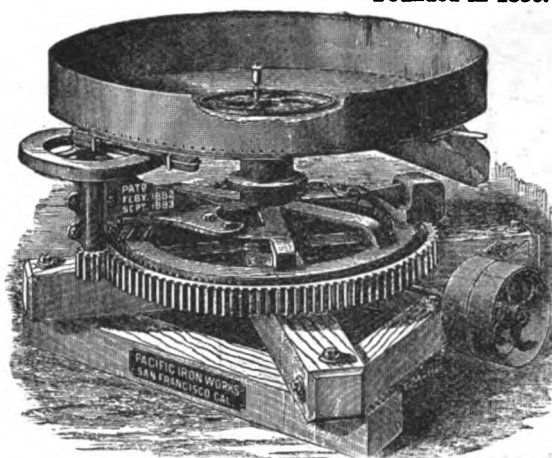
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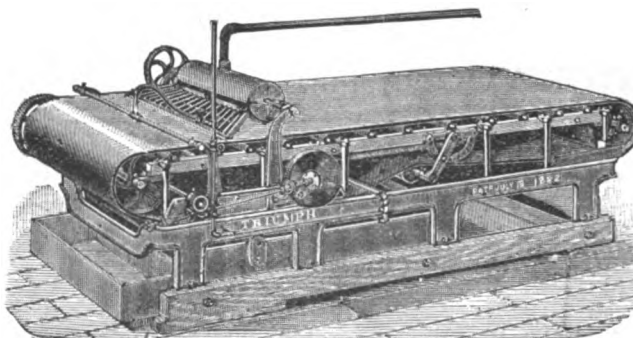
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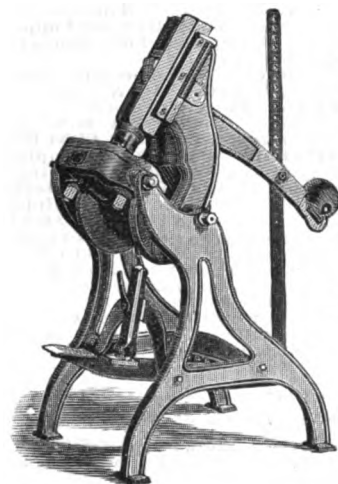
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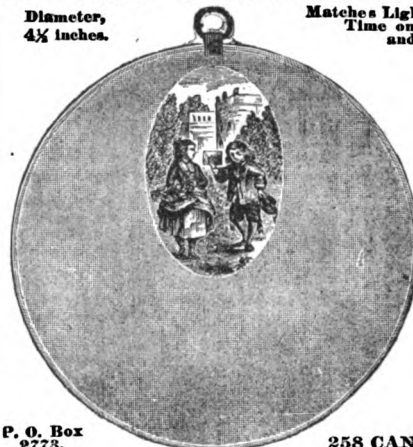
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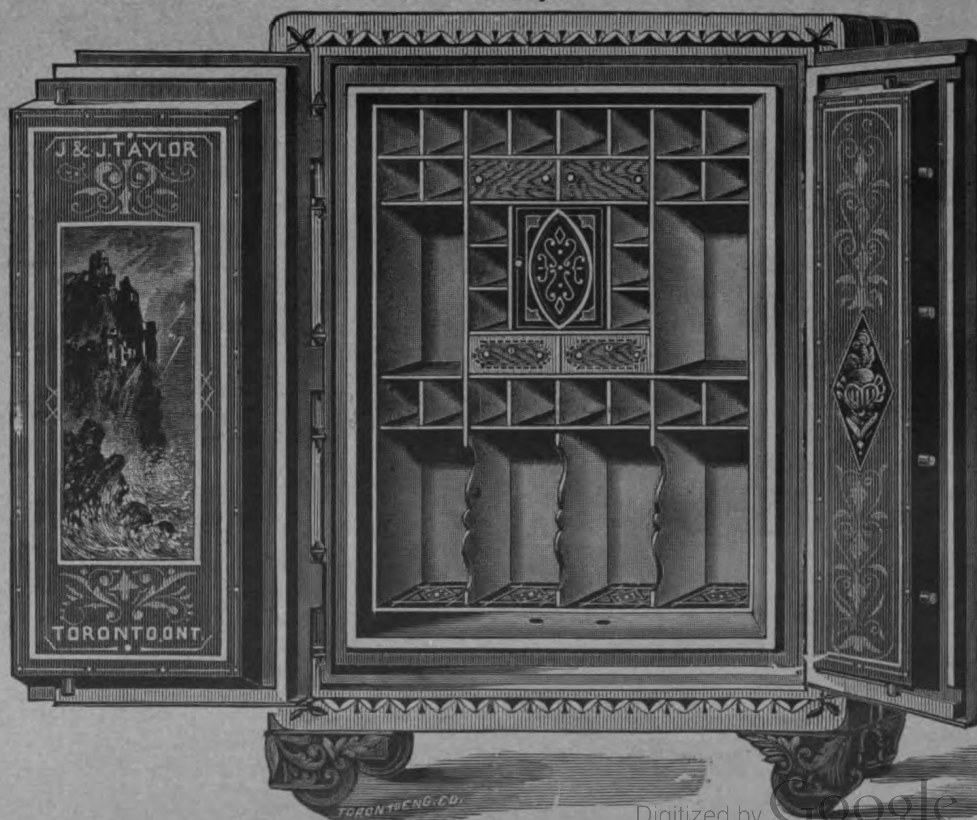
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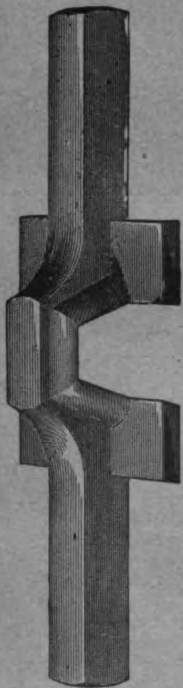
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VOL. XX.—NO. 2.

NEW YORK, AUGUST, 1887.

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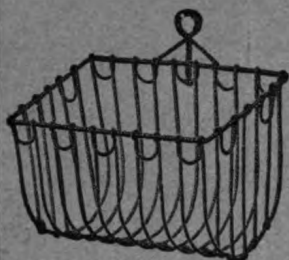
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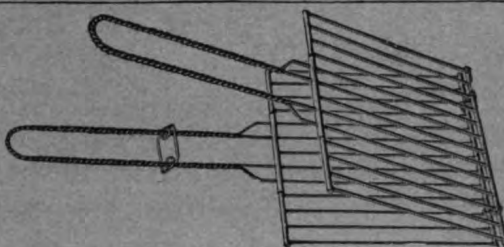
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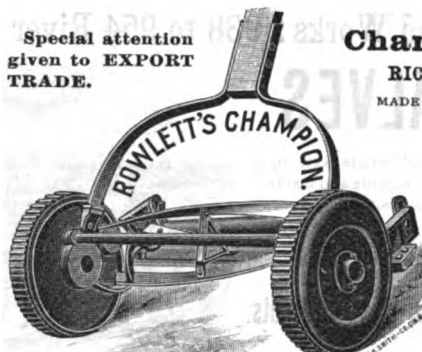
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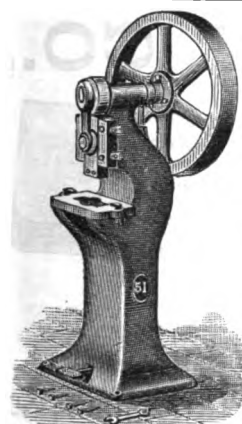
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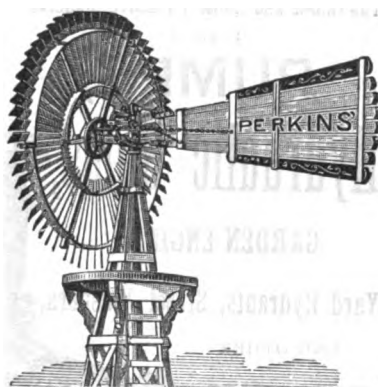
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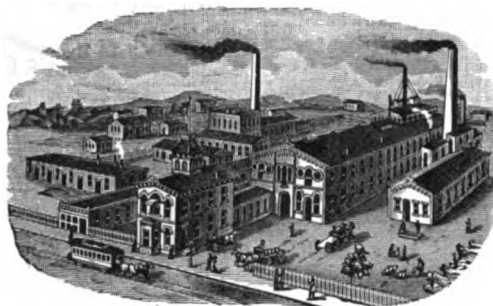


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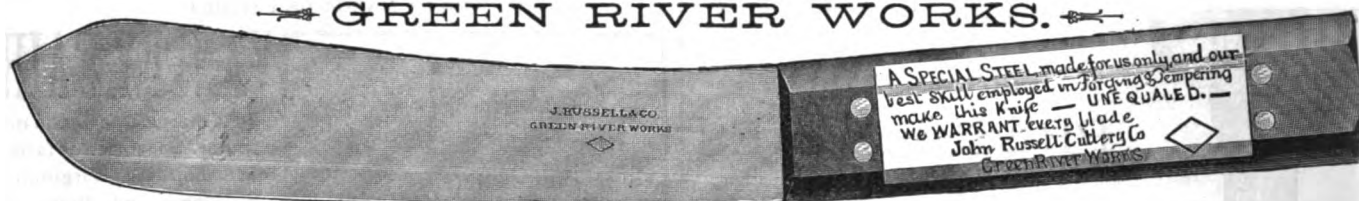
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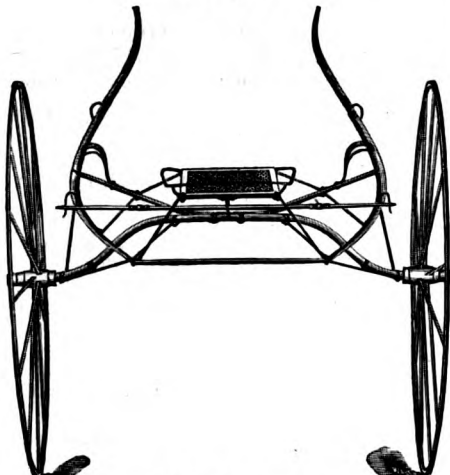
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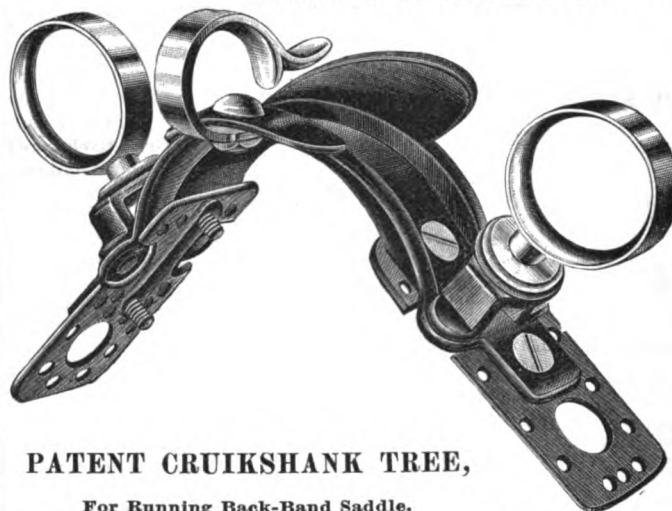
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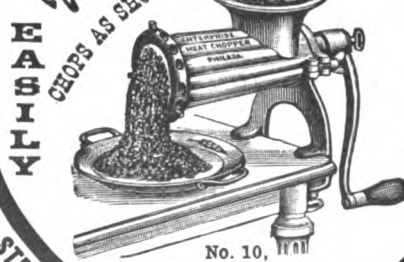
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Les titres de cette table des matières classifiées sont reproduits en cinq langues, anglais, français, allemand, espagnol et portugais, formant ainsi un GLOSSAIRE complet et mettant à même ceux d'entre les lecteurs qui ne comprennent pas l'anglais de trouver aussitôt la classe d'annonce qui les intéresse.

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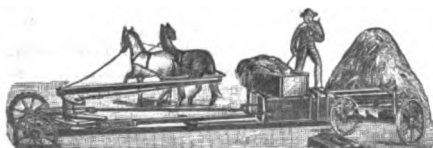
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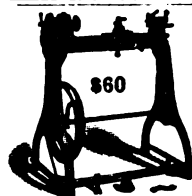
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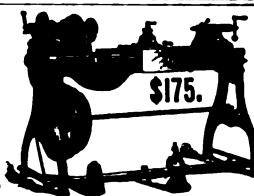
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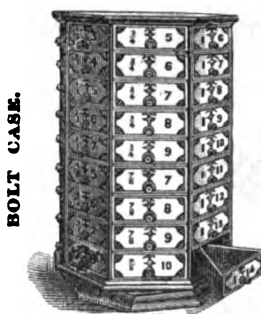
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## THE BRITISH PARLIAMENT AND HALL-MARKING.

**I**N the House of Commons on March 4, Mr. Kimber asked the Secretary to the Board of Trade whether his attention had been called to the case of Messrs. Robbins & Appleton, agents in this country of the Waltham Watch Manufacturing Company, who, having an order for Australia for 400 Waltham Railway watches, and having the movements in their possession and desiring to have them cased in this country, un-hallmarked, but, in American style, marked "Sterling  $\frac{9}{10}$ ," applied to the Goldsmiths' Company for permission to have the order executed; whether such permission was refused on the ground that it was illegal for any watch-case manufacturers in the United Kingdom to be exempted from the compulsory obligation of assay and hall-marking; whether, as a consequence, the order had to be executed in America, to the loss of English watch-case makers of an order for 400 cases, and an estimated loss of 10,000 cases per annum; whether Her Majesty's Government would consider the expediency, in the interest of British industry, of abolishing the compulsory obligation of assay of watch-cases manufactured in the United Kingdom for export abroad; whether he was aware that parts of the works of watches are made abroad and put together sometimes with other parts made in this country, and that the Merchandise Marks Act (1862) Amendment Bill makes no provision for such cases, and whether the government intended to introduce any amendments to apply to them, and, if so, how they will be dealt with.—*London Daily Chronicle*, March 5, 1887.

John Bull suffers from the so-called Hall-Mark laws in more than one way. Silver goods generally have to be marked at some little cost for stamping. But the expense to the trade is not that trifling payment alone. For the trouble of sending the unfinished goods to the hall-marking office, the damage likely to be done to them through stamping and the delay incurred thereby are items that do count. However, this is the least of the grievances caused by the hall-mark law, for Great Britain lives chiefly on her export—and she necessarily exports a great deal to countries where the hall-mark is considered no better than the guaranty stamp of reliable manufacturers, and where people do not care to pay for the obsolete stamp tax levied in John Bull's own isle. There's the rub. The *Waltham* stamp, which goes annually on something like 300,000 gold and silver cases, means  $\frac{9}{10}$  fine if it is accompanied by the word *sterling*, and  $\frac{9}{10}$  fine if accompanied by the word *coin*. The Waltham Company alone turns out 80 per cent. more watches annually than all Great Britain together, for, according to the *London Times*, the total watch product of Great Britain in 1883 was only about 200,000, while the Waltham Company furnish fully 1,200 daily, or 360,000 watches per annum. The interest which this great company has at stake is, therefore, greater than what all Parliament has to deal with in this particular instance. And the fact goes without saying, that no manufacturer can live unless he makes his goods up to the standard represented by him.—*New York Jewelers' Circular and Horological Review*.

## THE WALTHAM CHRONOGRAPH.

**T**HE WALTHAM Chronograph is above all a thoroughly reliable timekeeper, and its mechanism to start, stop and fly back is of the simplest and most durable construction. While it is in every respect a fine and accurate watch, it is decidedly not a frail one, neither is it more liable to accidents than the plainest watch made. A notable feature of the Waltham Chronograph is that all its parts are on the top plate, freely exposed to view, showing at once that it is not a complicated watch. It is likewise important to the watchmaker that the fifteen or twenty pieces which make up the chronograph attachment proper can be easily examined without taking the watch down, and duplicates of any of these may at all times be obtained like all other Waltham watch materials. In case the chronograph attachment requires taking down, the regular timekeeping parts need not be disturbed.—*New York Jewelers' Circular and Horological Review*.

## GOOD WATCHES FOR LADIES.

**F**OR A NUMBER of years this country has been flooded with European chatelaine watches for ladies, the chief attraction of which was their low price. No quality at all was claimed for the movements, and they might as well have gone on the market with dial and hands only. Of course no guarantee went with these watches, and the poor woman who depended on one of them for time surely "got lost." We are glad to know that there is now a ladies' watch made in this country extremely low in price, with a guaranteed "Anchor" movement in which the fullest reliance may be placed. Its case is made of an aluminine alloy of great whiteness and lustre that wears much better even than silver. It is ornamented with a gold bezel and an encrusted gold shield, and is of extreme lightness of weight. We should say that it looks neater than any ladies' watch we have ever seen, and dealers who believe in the adage that "ladies are friends indeed" can serve them no better than by offering these beautiful little American timekeepers in the place of the cheap European chatelaines which it is almost a disgrace to handle. The price of the Waltham Aluminine Anchor watch is pitched very low indeed.—*Providence Manufacturing Jeweler*.



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FOR BURNING KEROSENE, OIL OR PETROLEUM.

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Our Lamps are wound up on the bottom and the key is fastened to the machinery, thus preventing loss or breakage.

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It will stand a sudden blast of wind, and burn equally well in warm or cold climates; do not be deceived by any other lamp; see that Hitchcock's Patent stamped on every Lamp.

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Se les da cuerda á nuestras lámparas en el fondo y la llave se halla asegurada á la maquinaria, con lo que se evitan perdida ó quebradura. Esta lámpara tiene gran éxito en todas partes del mundo, habiéndose usado ya millares de ellas dando la mayor satisfacción.

El adjunto grabado muestra una de muchas.

Se genera la combustión por medio de un abanico, tiene movimiento de reloj que hace funcionar éste y fuerza el aire á que penetre en la llama produciendo una hermosa luz blanca estable de diez y seis velas de intensidad. Resiste á un repentino soplo de viento y arde igualmente bien en climas cálidos ó fríos. No se dejen engañar por otras lámparas; véase que lleve la marca: Patente de Hitchcock.

Suplicamos repetidamente á los negociantes en lámparas envíen sus firmas y direcciones para que se les encaminen catálogos y listas de precios. Sirvanse añadir referencias.



This cut shows only one of many.

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PATENTE DE HITCHCOCK,

PARA KEROSENA, AZEITE OU PETRÓLEO.

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Sem Globo. Sem Tubo. Sem substituto por ambos. Sem Fumo. Sem Olor. Sem Perigo. Inexplosivel. Este cliché representa uma de muitas.

Se lhes da corda no fundo e a chave, assegurada ao machinismo, impede perda e quebra.

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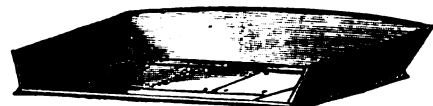
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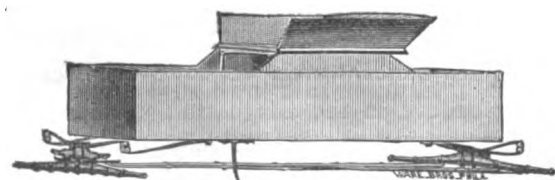
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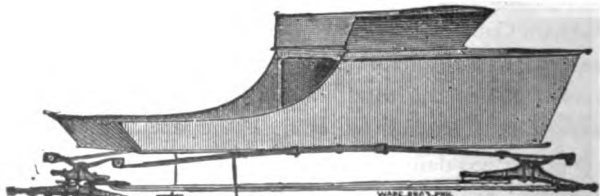
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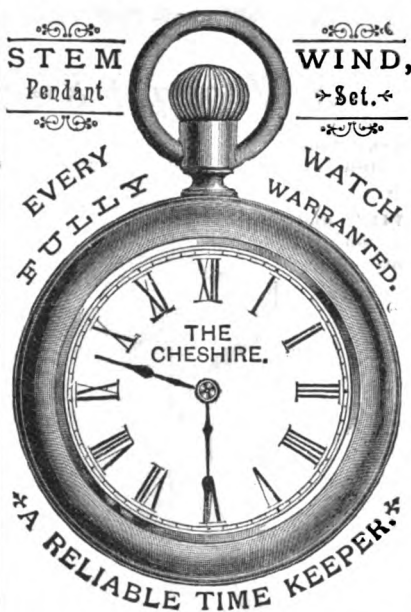
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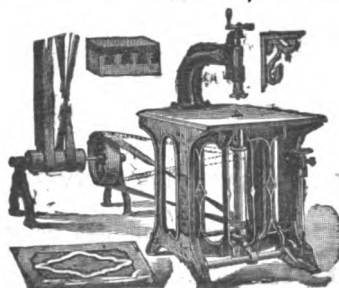
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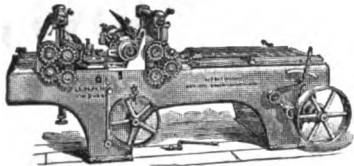


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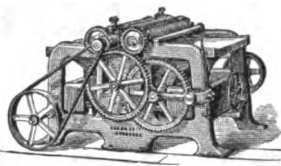
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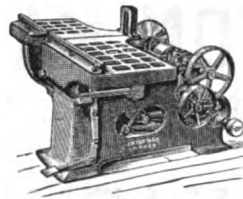




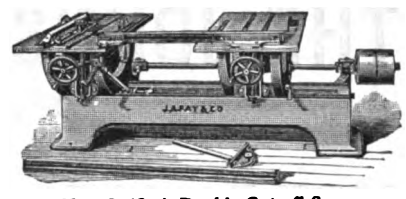
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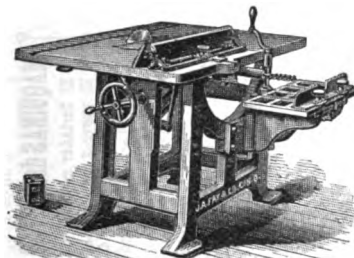
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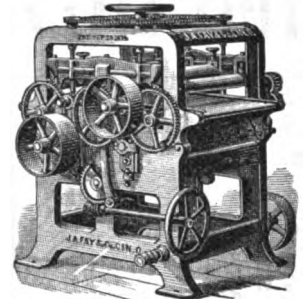
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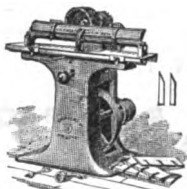
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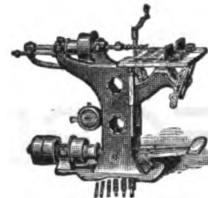
D. L. LYON, Sec'y.



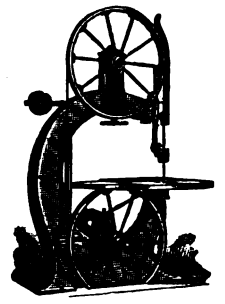
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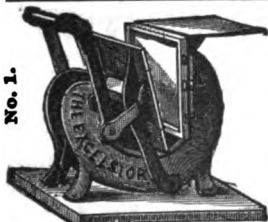
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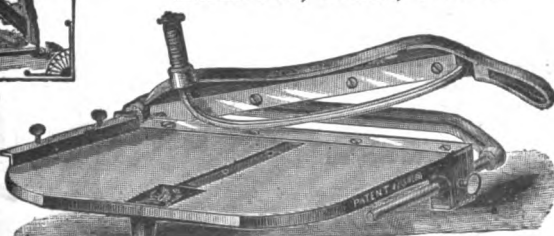
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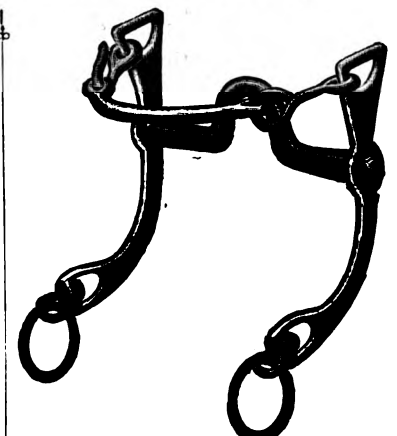
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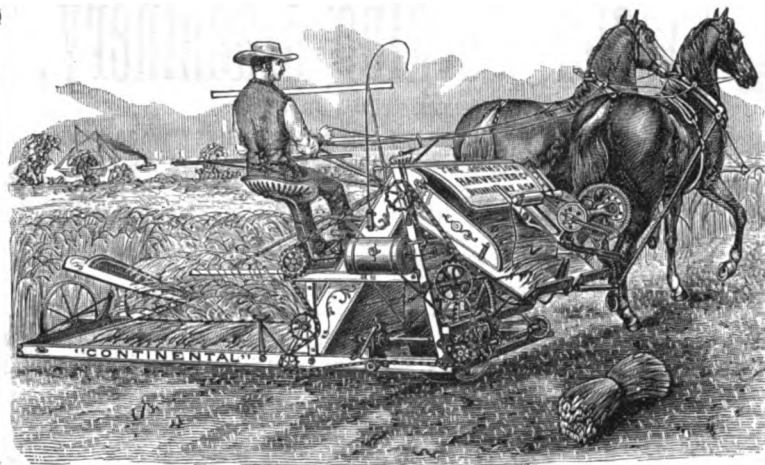
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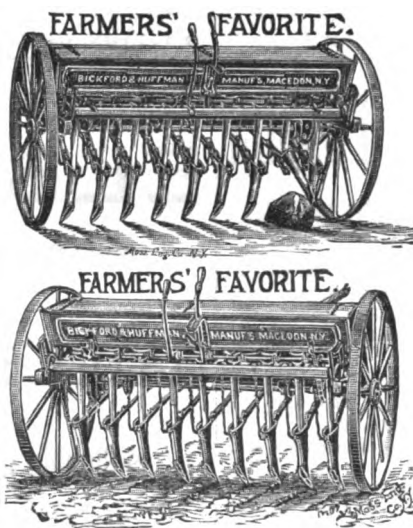
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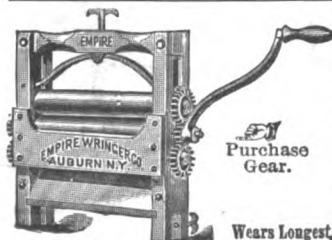
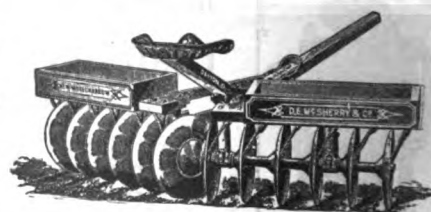
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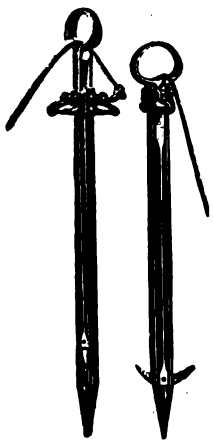
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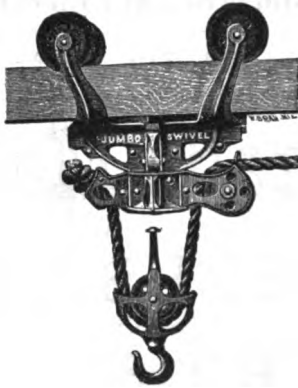
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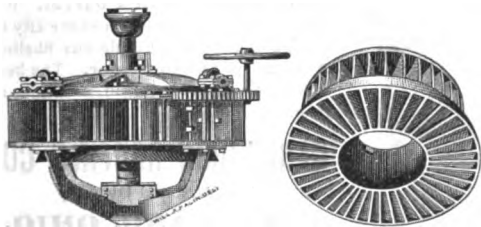
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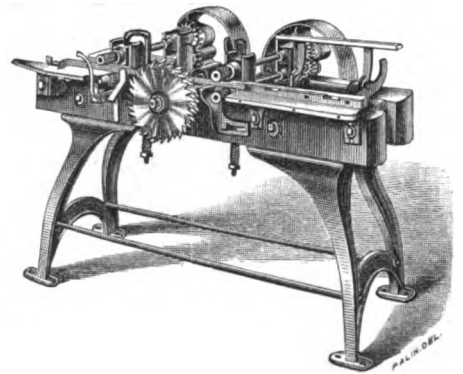


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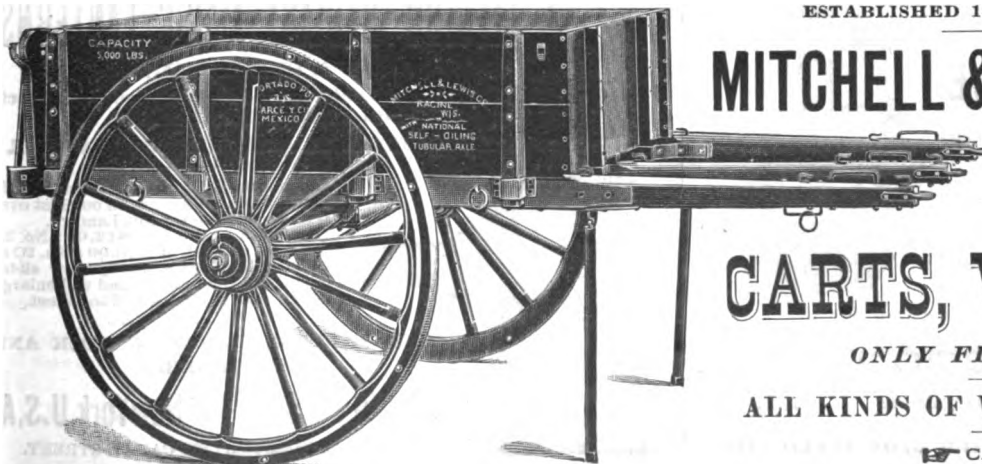
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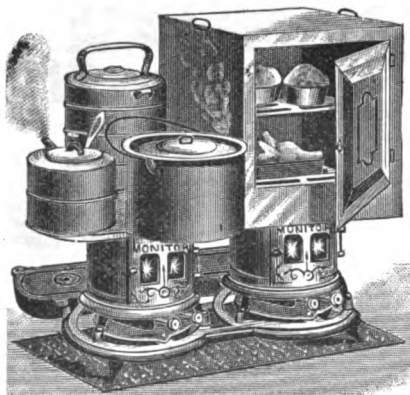


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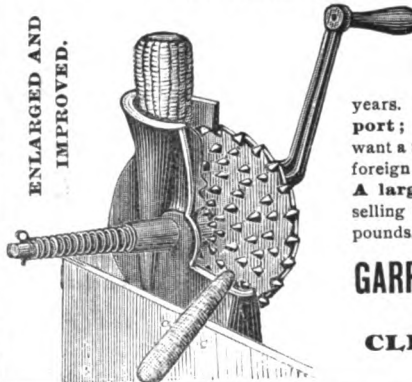
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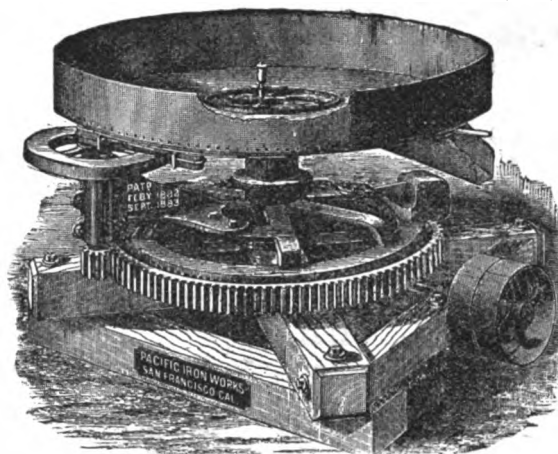
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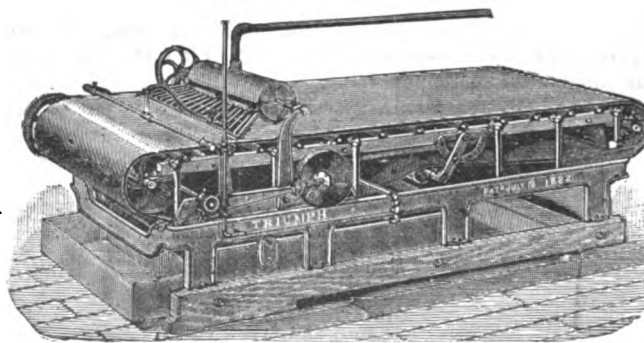
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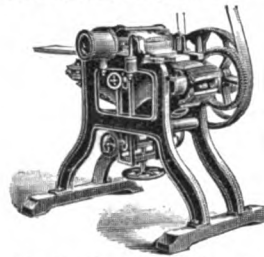
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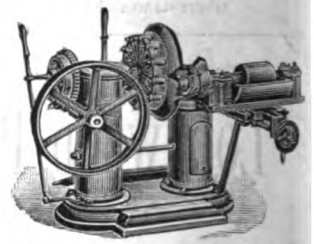
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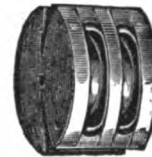
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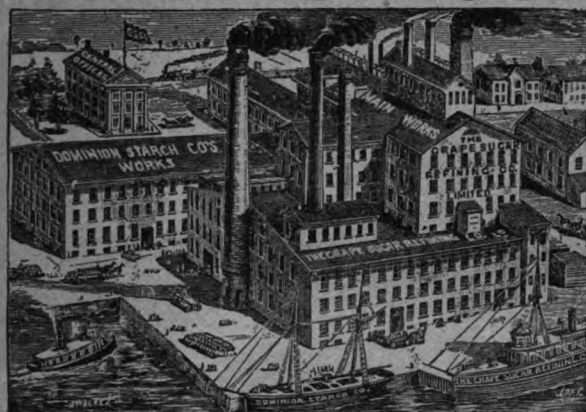
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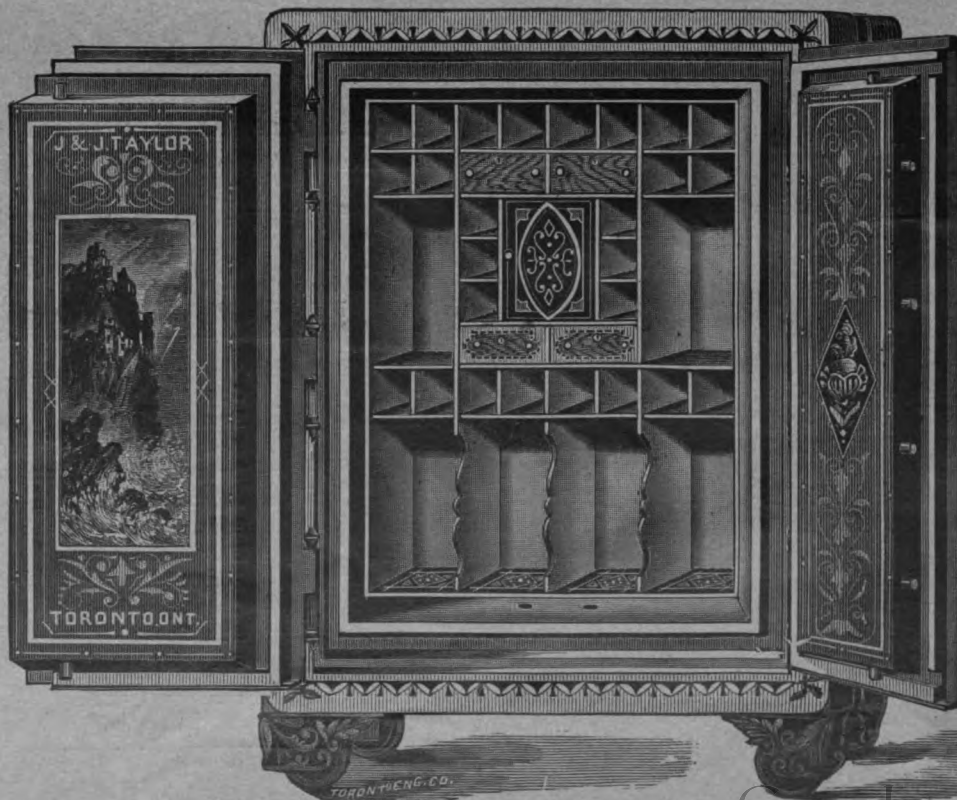
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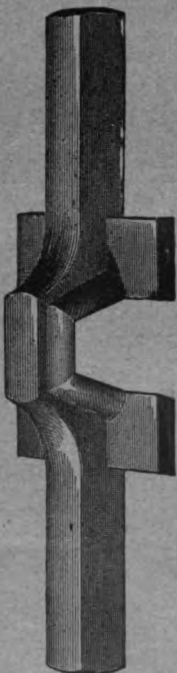
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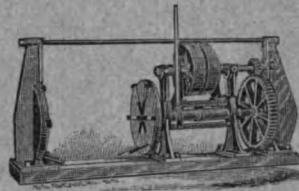
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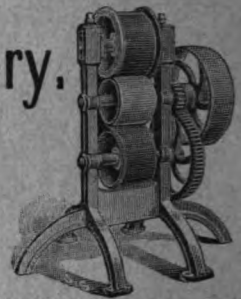
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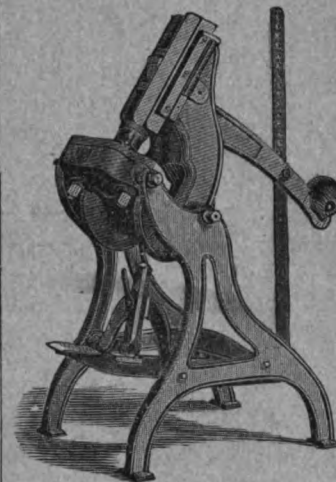


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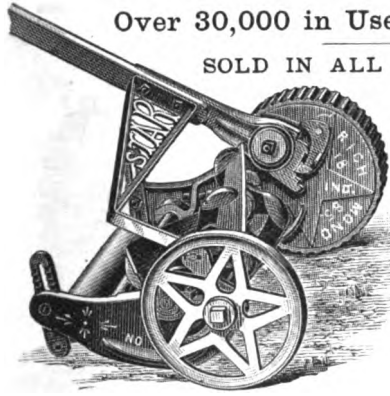
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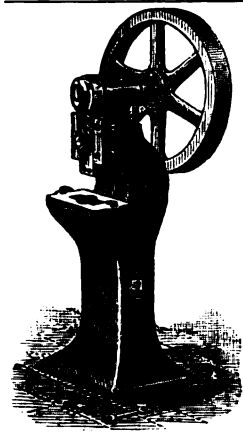
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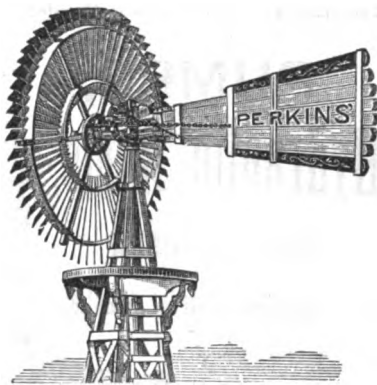
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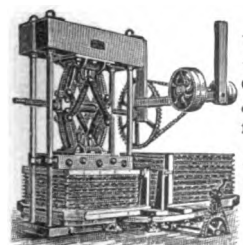
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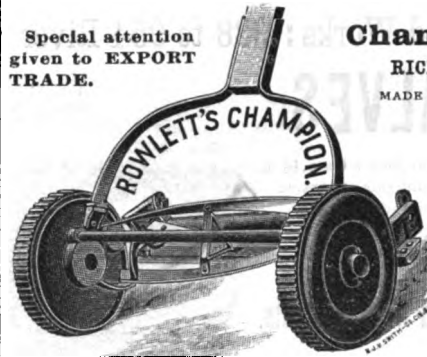
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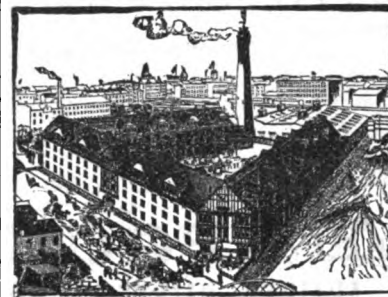
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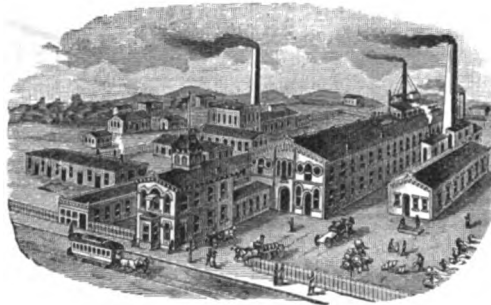


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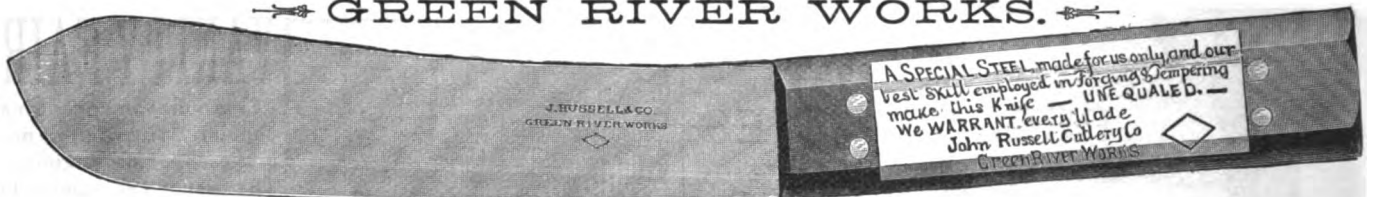
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Austria.....	Florin.....= 100 kreutzers.....	Fl.	.37,1
Azores.....	Milreis.....= 1,000 reis.....	Rs. \$	.82,5
Belgium.....	Franc.....= 100 centimes.....	Fr.	.19,3
Bolivia.....	Boliviano.....= 10 reales.....	\$	.75,1
Brazil.....	Milreis.....= 1,000 reis.....	Rs \$	.54,6
British Possessions in N. A.....	Dollar.....= 100 cents.....	\$	\$1.00
Chili.....	Peso.....= 100 centavos.....	\$	.91,2
China.....	Tael.....= 100 mace.....	Tael.	1.20
Cuba.....	Peso.....= 100 centavos.....	\$	.93,2
Denmark.....	Krone.....= 100 ore.....	Kr.	.26,8
Ecuador.....	Peso.....= 100 centavos.....	\$	.75,1
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France.....	Franc.....= 100 centimes.....	Fr.	.19,3
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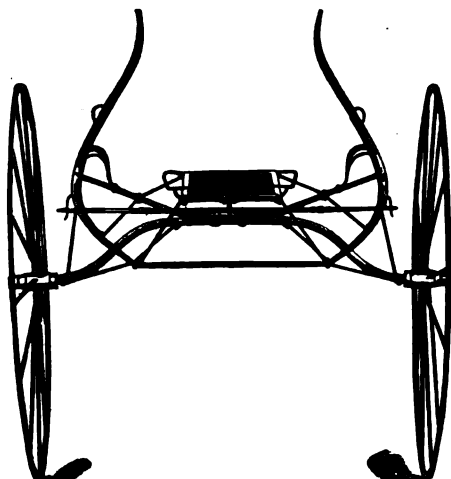
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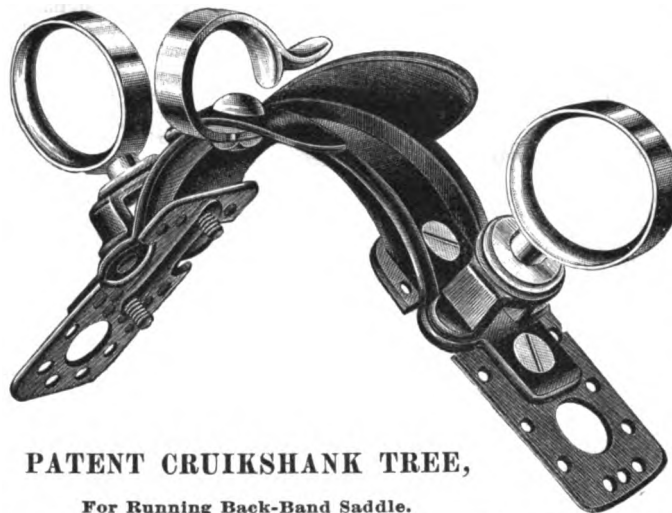
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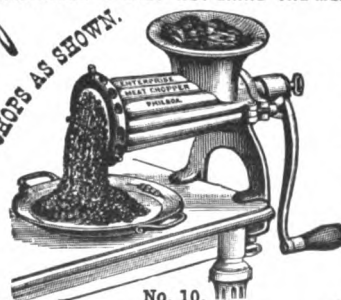
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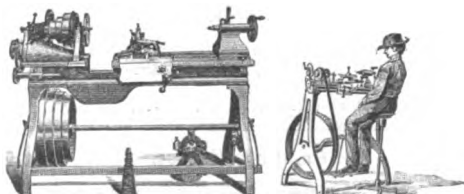
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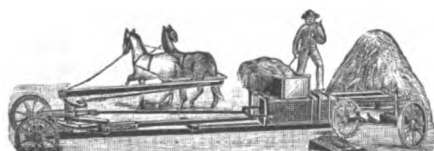
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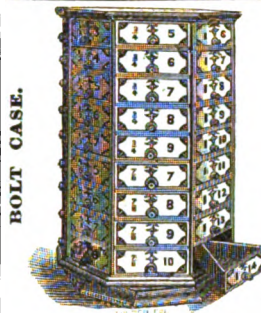
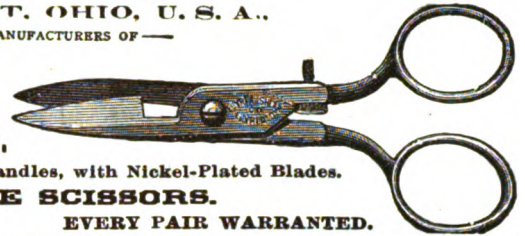
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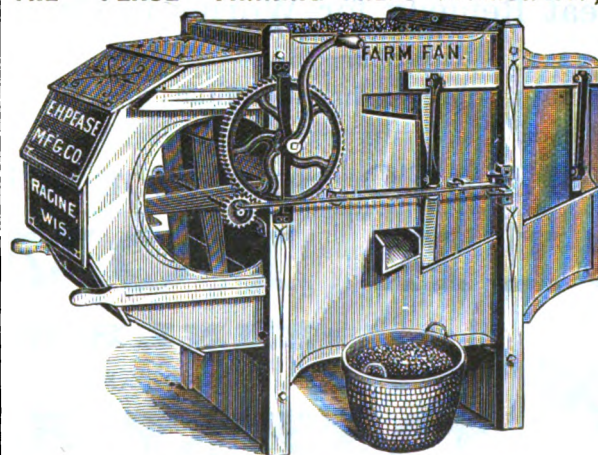
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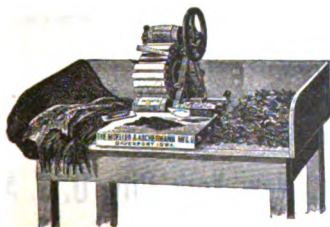


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## THE BRITISH PARLIAMENT AND HALL-MARKING.

**I**N the House of Commons on March 4, Mr. Kimber asked the Secretary to the Board of Trade whether his attention had been called to the case of Messrs. Robbins & Appleton, agents in this country of the Waltham Watch Manufacturing Company, who, having an order for Australia for 400 Waltham Railway watches, and having the movements in their possession and desiring to have them cased in this country, un-hallmarked, but, in American style, marked "Sterling 1886," applied to the Goldsmiths' Company for permission to have the order executed; whether such permission was refused on the ground that it was illegal for any watch-case manufacturers in the United Kingdom to be exempted from the compulsory obligation of assay and hall-marking; whether, as a consequence, the order had to be executed in America, to the loss of English watch-case makers of an order for 400 cases, and an estimated loss of 10,000 cases per annum; whether Her Majesty's Government would consider the expediency, in the interest of British industry, of abolishing the compulsory obligation of assay of watch-cases manufactured in the United Kingdom for export abroad; whether he was aware that parts of the works of watches are made abroad and put together sometimes with other parts made in this country, and that the Merchandise Marks Act (1862) Amendment Bill makes no provision for such cases, and whether the government intended to introduce any amendments to apply to them, and, if so, how they will be dealt with.—*London Daily Chronicle*, March 5, 1887.

John Bull suffers from the so-called Hall-Mark laws in more than one way. Silver goods generally have to be marked at some little cost for stamping. But the expense to the trade is not that trifling payment alone. For the trouble of sending the unfinished goods to the hall-marking office, the damage likely to be done to them through stamping and the delay incurred thereby are items that do count. However, this is the least of the grievances caused by the hall-mark law, for Great Britain lives chiefly on her export—and she necessarily exports a great deal to countries where the hall-mark is considered no better than the guaranty stamp of reliable manufacturers, and where people do not care to pay for the obsolete stamp tax levied in John Bull's own isle. There's the rub. The *Waltham* stamp, which goes annually on something like 300,000 gold and silver cases, means  $\frac{2}{1000}$  fine if it is accompanied by the word *sterling*, and  $\frac{1}{1000}$  fine if accompanied by the word *coin*. The Waltham Company alone turns out 80 per cent. more watches annually than all Great Britain together, for, according to the *London Times*, the total watch product of Great Britain in 1883 was only about 200,000, while the Waltham Company furnish fully 1,200 daily, or 360,000 watches per annum. The interest which this great company has at stake is, therefore, greater than what all Parliament has to deal with in this particular instance. And the fact goes without saying, that no manufacturer can live unless he makes his goods up to the standard represented by him.—*New York Jewelers' Circular and Horological Review*.

## THE WALTHAM CHRONOGRAPH.

**T**HE WALTHAM Chronograph is above all a thoroughly reliable timekeeper, and its mechanism to start, stop and fly back is of the simplest and most durable construction. While it is in every respect a fine and accurate watch, it is decidedly not a frail one, neither is it more liable to accidents than the plainest watch made. A notable feature of the Waltham Chronograph is that all its parts are on the top plate, freely exposed to view, showing at once that it is not a complicated watch. It is likewise important to the watchmaker that the fifteen or twenty pieces which make up the chronograph attachment proper can be easily examined without taking the watch down, and duplicates of any of these may at all times be obtained like all other Waltham watch materials. In case the chronograph attachment requires taking down, the regular timekeeping parts need not be disturbed.—*New York Jewelers' Circular and Horological Review*.

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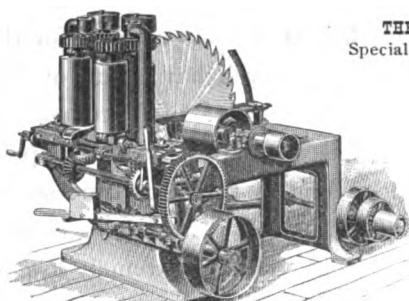
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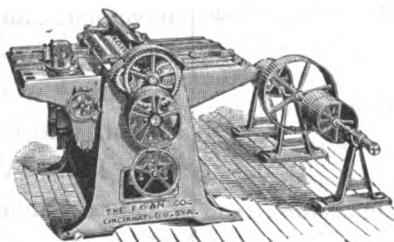
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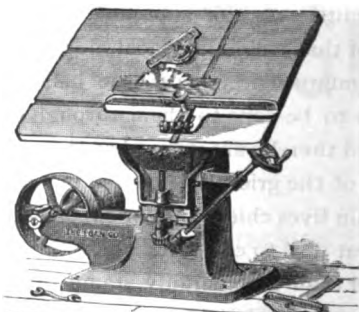
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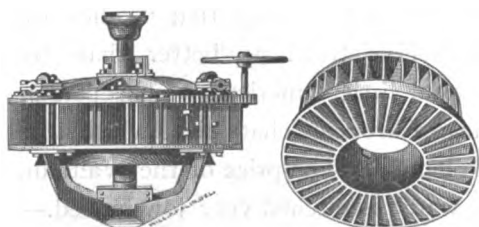
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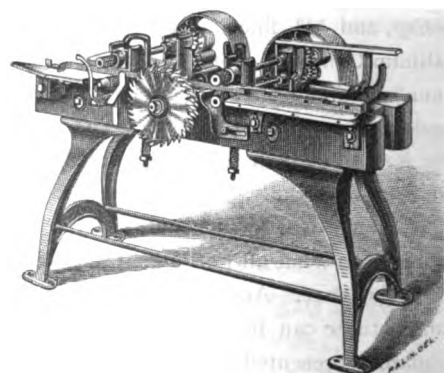


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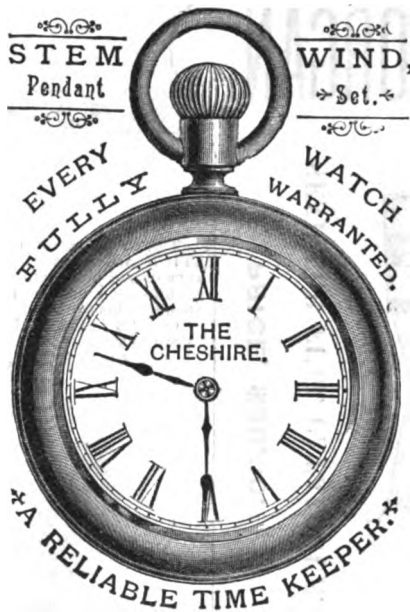
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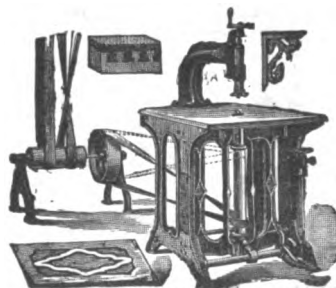
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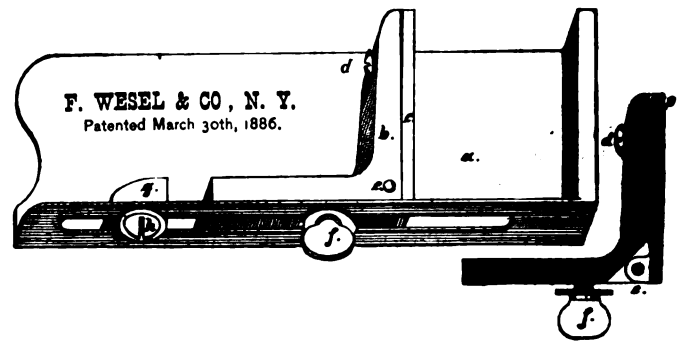
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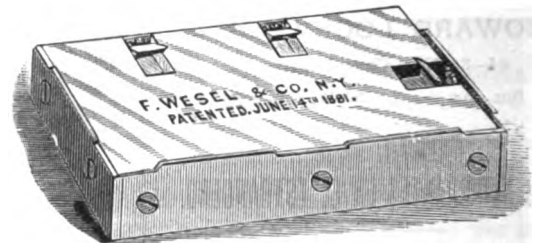
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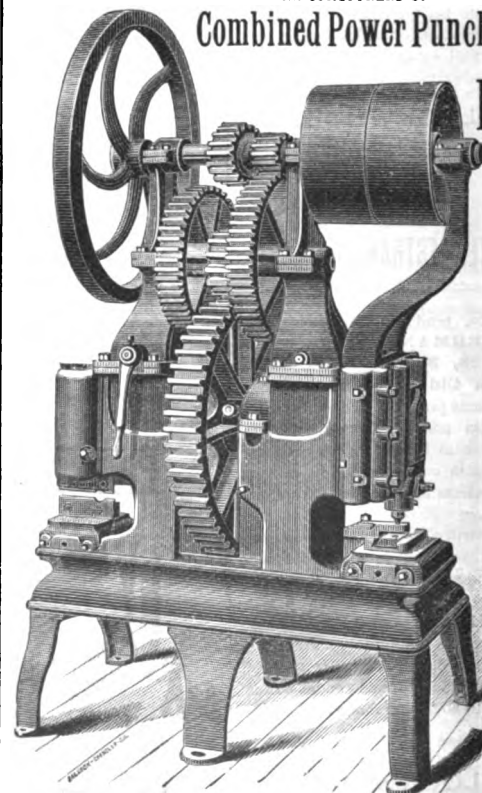
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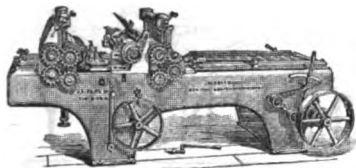
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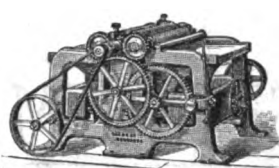


Colton's Imp. Power Punch and Shears. Machine No. 1.

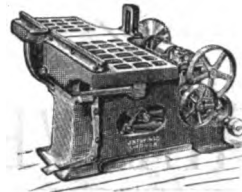




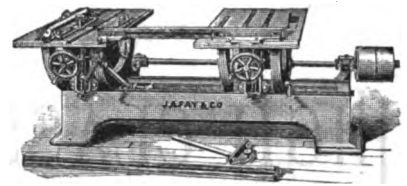
No. 2½.—Pacific Planer and Matcher.



No. 4¼.—Cabinet Surfer.



No. 2.—Automatic R'y Cut-off Saw.



New Strifler's Double Cut-off Saw.

PATENT IMPROVED

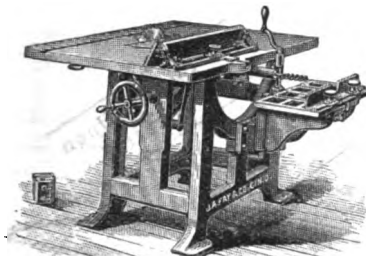
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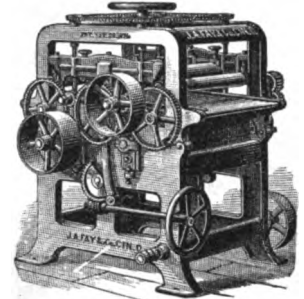
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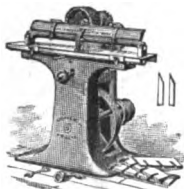
Cor. John and Front Streets,  
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W. H. DOANE, Pres't.

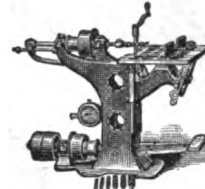
D. L. LYON, Sec'y.



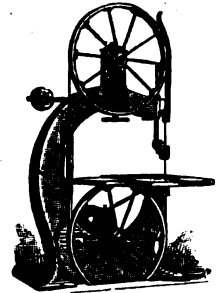
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Automatic Knife Grinder.



Horizontal Boring Machine.



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1847-1887.

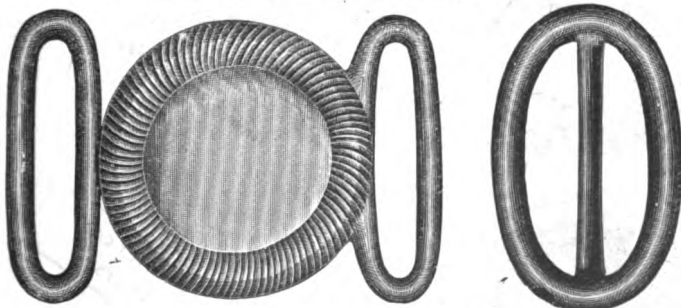
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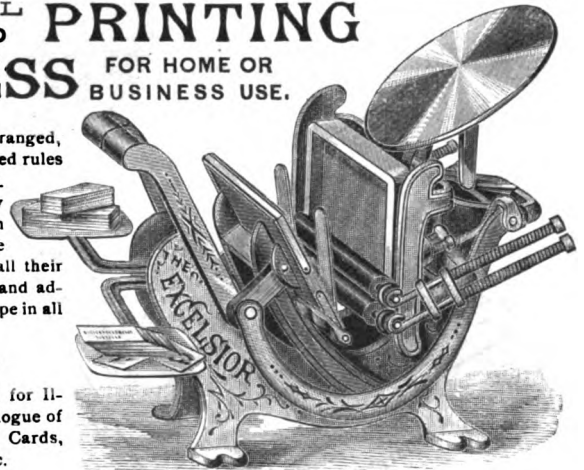
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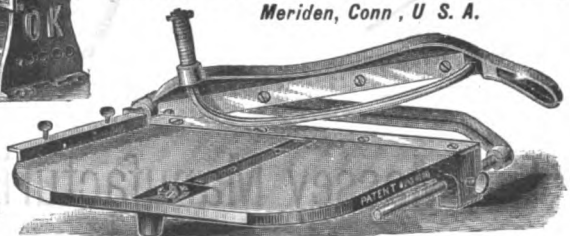
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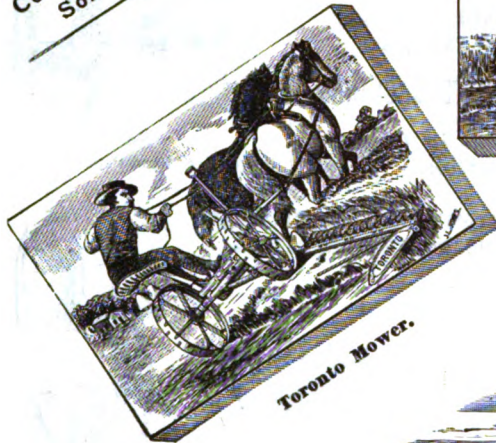


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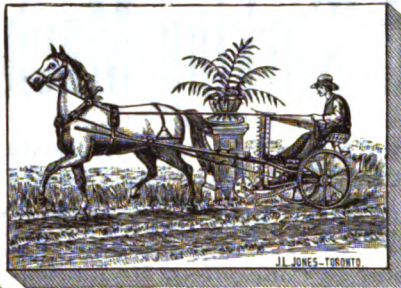


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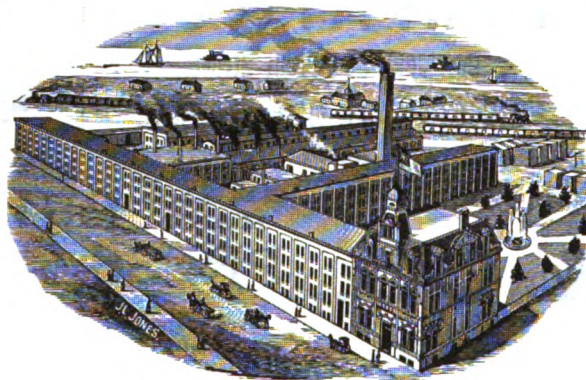


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Catalogue Upon  
Application.



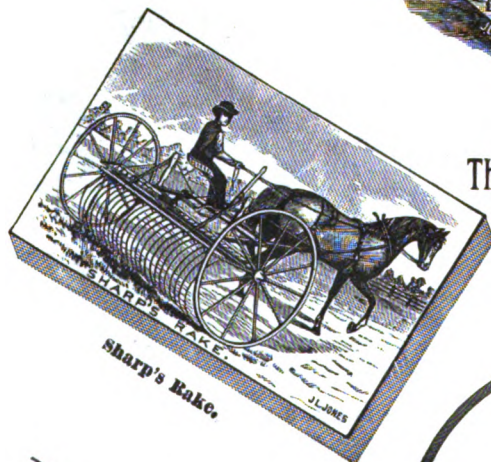
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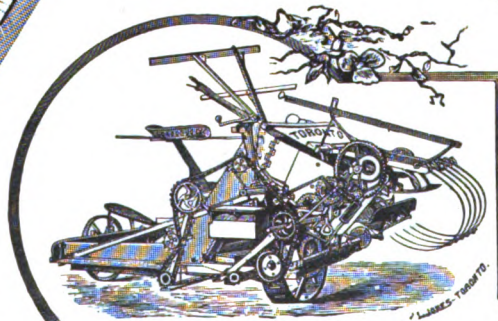
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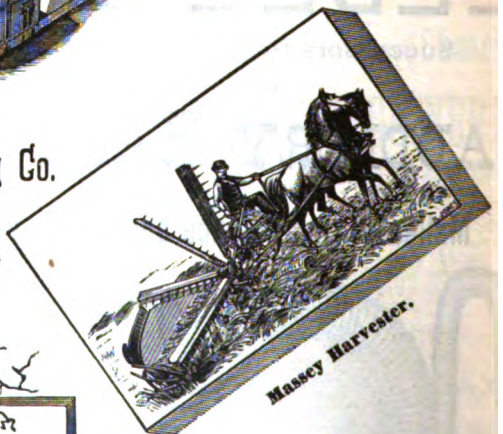


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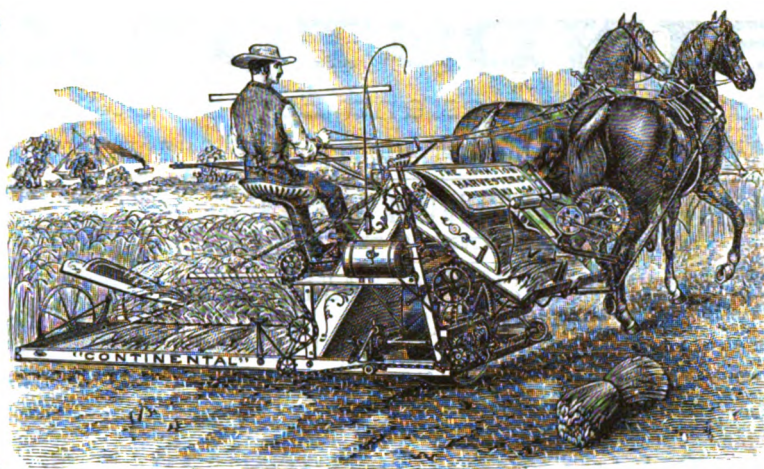
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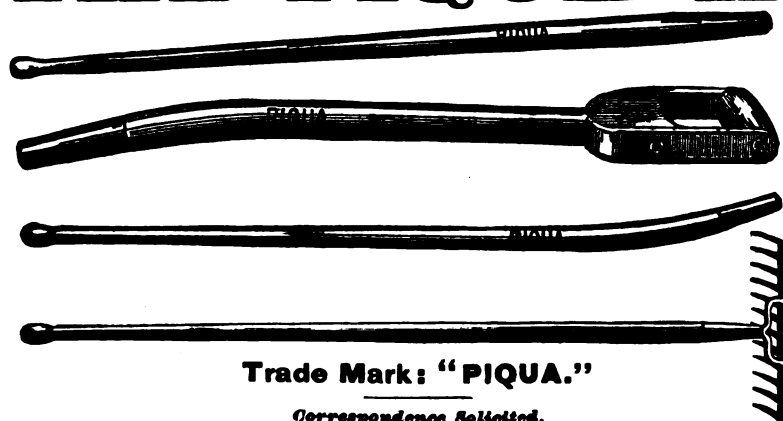
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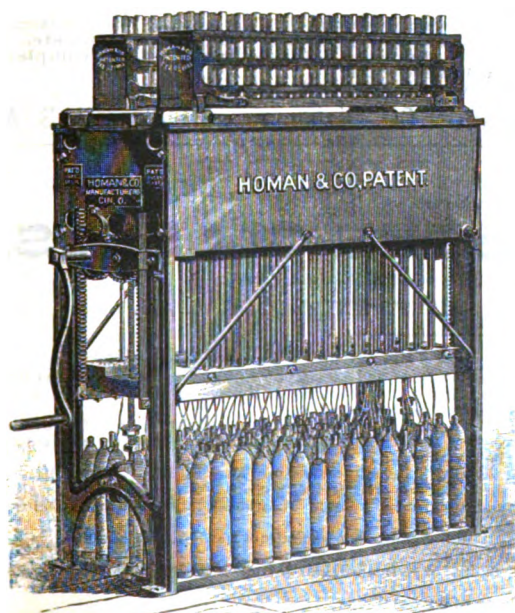
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WITH IMPROVED PATENT RACK AND GAGE.



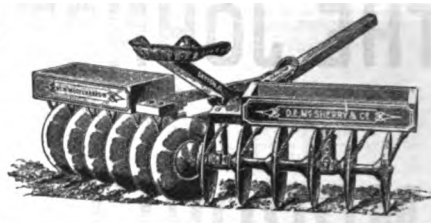
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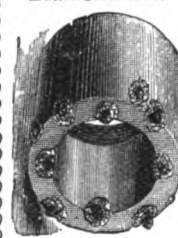


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BY THE HORSE  
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Regulated  
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THE LARGEST MANUFACTURERS OF WELL TOOLS.

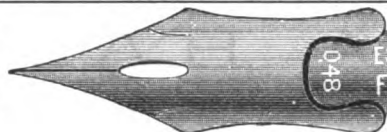
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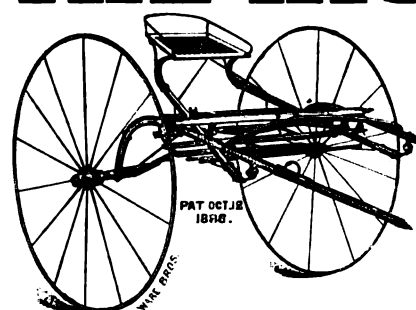
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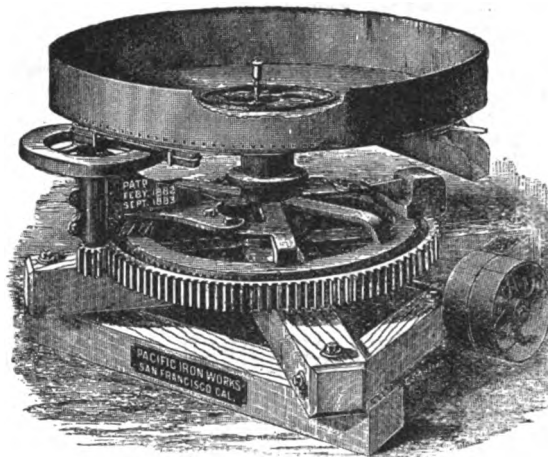
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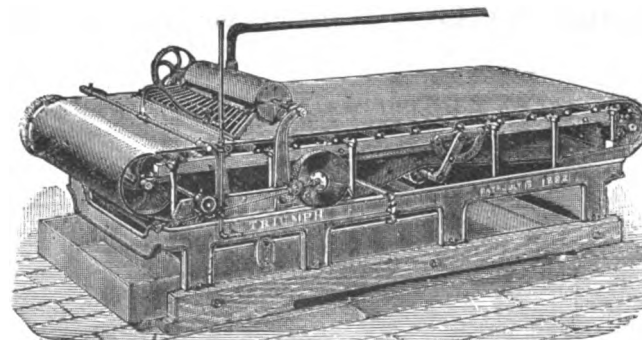
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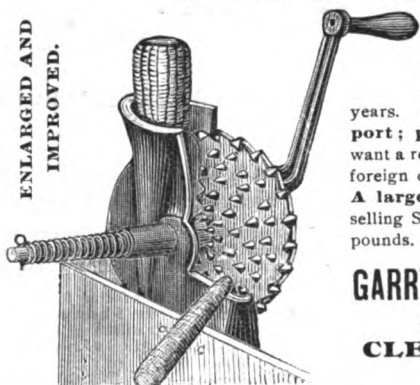
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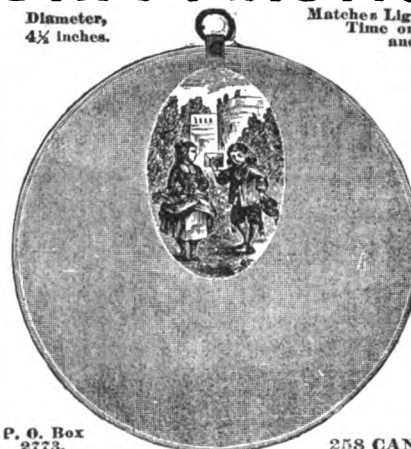
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Matches Light Instantly and Surely every Time on this Thoroughly Useful and Beautiful Article.

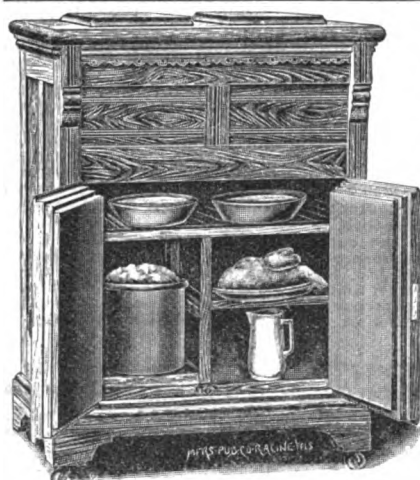
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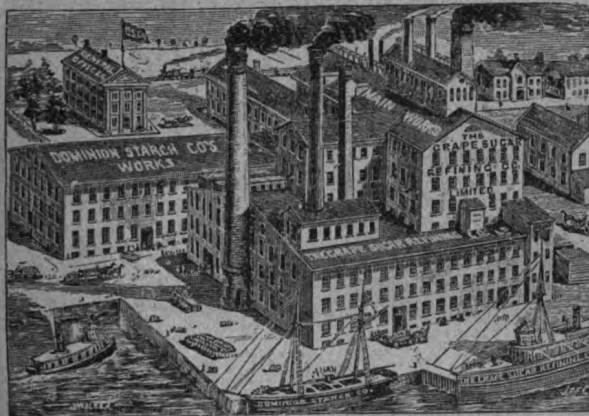
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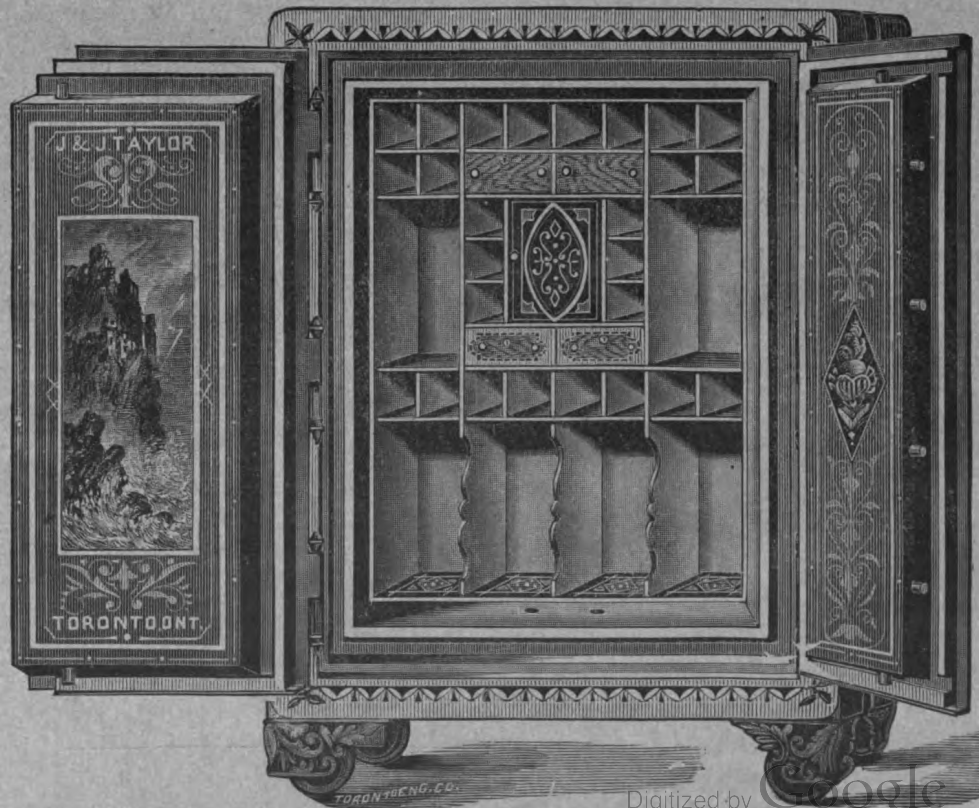
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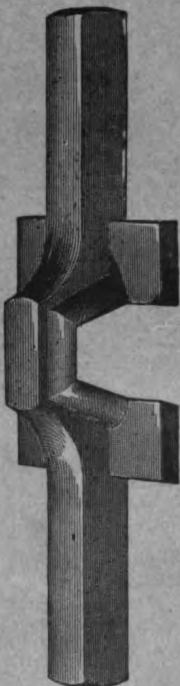
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VOL. XX.—NO. 4.

NEW YORK, OCTOBER, 1887.

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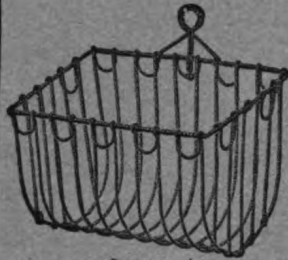
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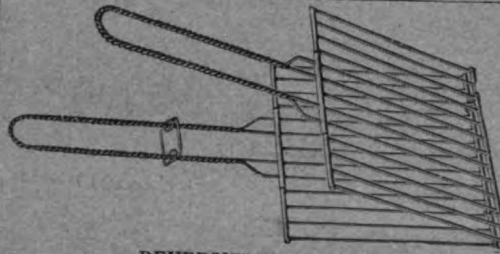
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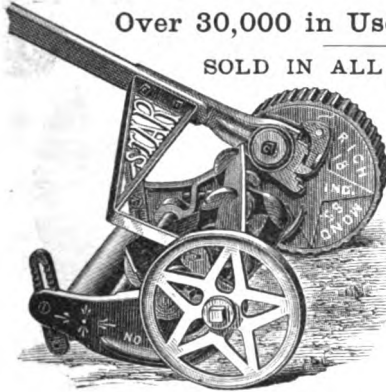
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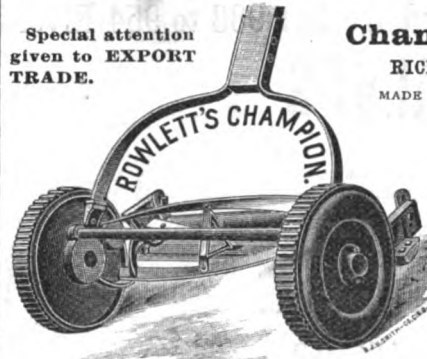
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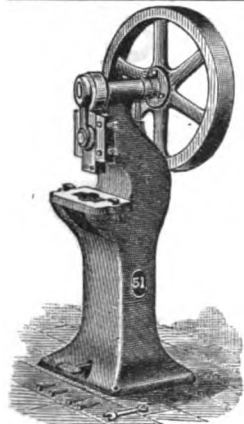
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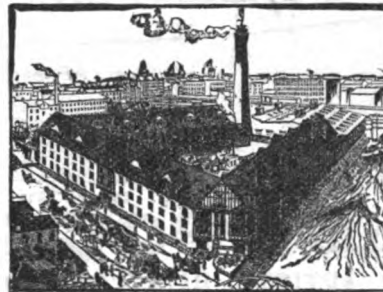
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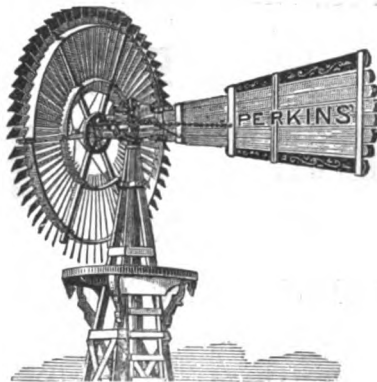
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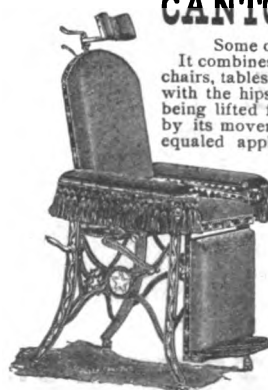


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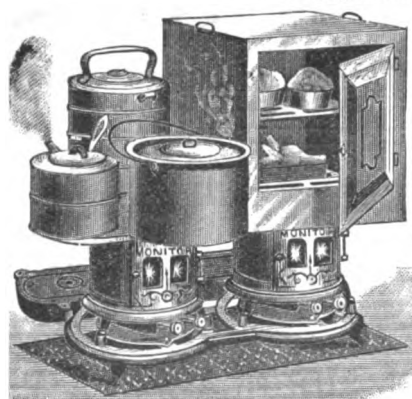
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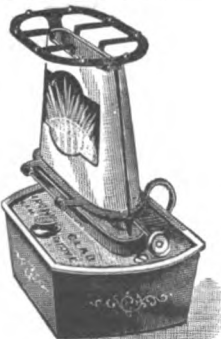
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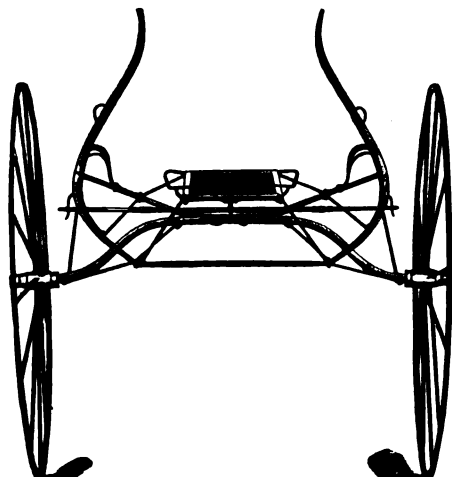
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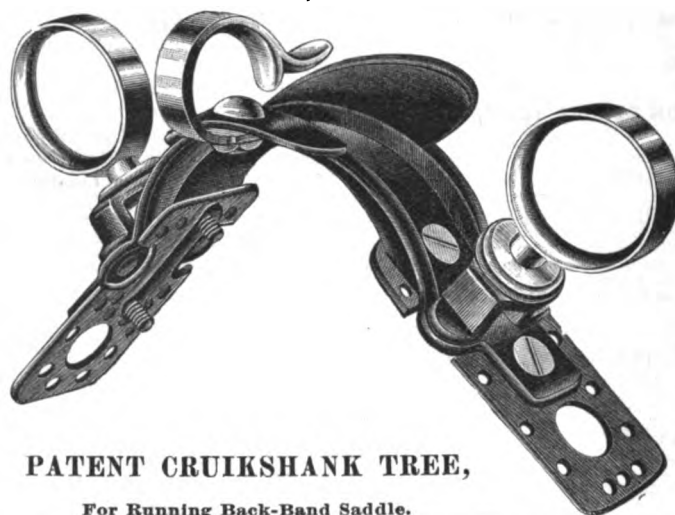
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Les titres de cette table des matières classifiée sont reproduits en cinq langues, anglais, français, allemand, espagnol et portugais, formant ainsi un GLOSSAIRE complet et mettant à même ceux d'entre les lecteurs qui ne comprennent pas l'anglais de trouver aussitôt la classe d'annonce qui les interesse.

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## THE BRITISH PARLIAMENT AND HALL-MARKING.

**I**N the House of Commons on March 4, Mr. Kimber asked the Secretary to the Board of Trade whether his attention had been called to the case of Messrs. Robbins & Appleton, agents in this country of the Waltham Watch Manufacturing Company, who, having an order for Australia for 400 Waltham Railway watches, and having the movements in their possession and desiring to have them cased in this country, un-hallmarked, but, in American style, marked "Sterling  $\frac{999}{1000}$ ," applied to the Goldsmiths' Company for permission to have the order executed; whether such permission was refused on the ground that it was illegal for any watch-case manufacturers in the United Kingdom to be exempted from the compulsory obligation of assay and hall-marking; whether, as a consequence, the order had to be executed in America, to the loss of English watch-case makers of an order for 400 cases, and an estimated loss of 10,000 cases per annum; whether Her Majesty's Government would consider the expediency, in the interest of British industry, of abolishing the compulsory obligation of assay of watch-cases manufactured in the United Kingdom for export abroad; whether he was aware that parts of the works of watches are made abroad and put together sometimes with other parts made in this country, and that the Merchandise Marks Act (1862) Amendment Bill makes no provision for such cases, and whether the government intended to introduce any amendments to apply to them, and, if so, how they will be dealt with.—*London Daily Chronicle*, March 5, 1887.

John Bull suffers from the so-called Hall-Mark laws in more than one way. Silver goods generally have to be marked at some little cost for stamping. But the expense to the trade is not that trifling payment alone. For the trouble of sending the unfinished goods to the hall-marking office, the damage likely to be done to them through stamping and the delay incurred thereby are items that do count. However, this is the least of the grievances caused by the hall-mark law, for Great Britain lives chiefly on her export—and she necessarily exports a great deal to countries where the hall-mark is considered no better than the guaranty stamp of reliable manufacturers, and where people do not care to pay for the obsolete stamp tax levied in John Bull's own isle. There's the rub. The *Waltham* stamp, which goes annually on something like 300,000 gold and silver cases, means  $\frac{999}{1000}$  fine if it is accompanied by the word *sterling*, and  $\frac{900}{1000}$  fine if accompanied by the word *coin*. The Waltham Company alone turns out 80 per cent. more watches annually than all Great Britain together, for, according to the *London Times*, the total watch product of Great Britain in 1883 was only about 200,000, while the Waltham Company furnish fully 1,200 daily, or 360,000 watches per annum. The interest which this great company has at stake is, therefore, greater than what all Parliament has to deal with in this particular instance. And the fact goes without saying, that no manufacturer can live unless he makes his goods up to the standard represented by him.—*New York Jewelers' Circular and Horological Review*.

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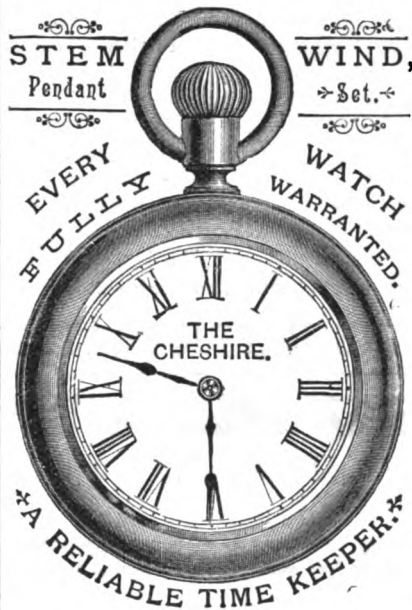
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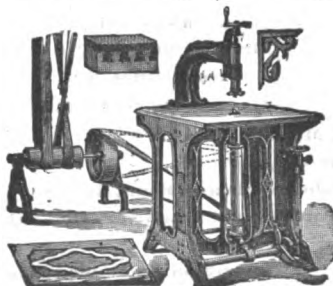
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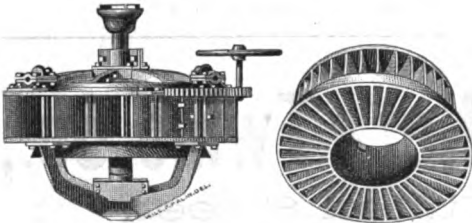


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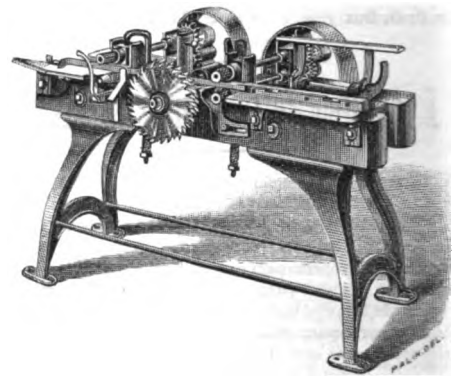


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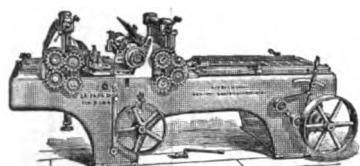
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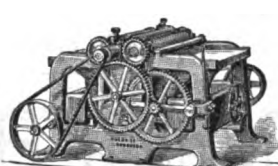
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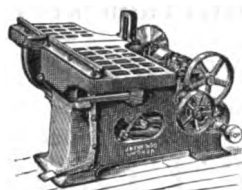




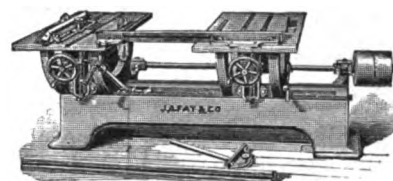
No. 3½.—Pacific Planer and Matcher.



No. 4½.—Cabinet Surfer.



No. 2.—Automatic R'y Cut-off Saw.

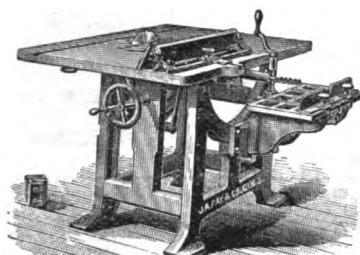


New Strifer's Double Cut-off Saw.

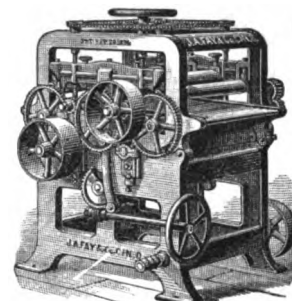
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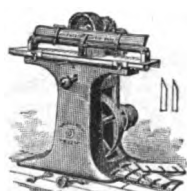
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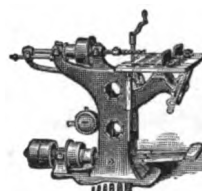
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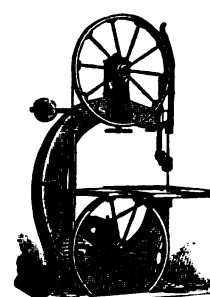
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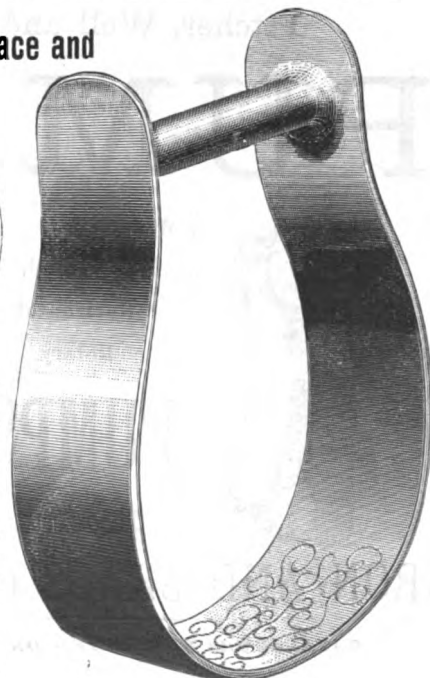
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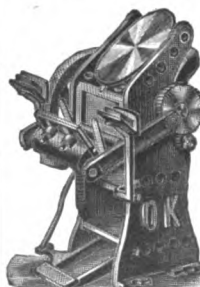
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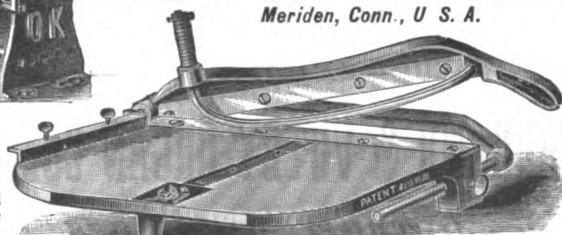
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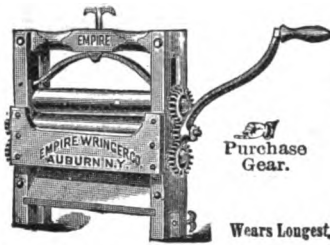
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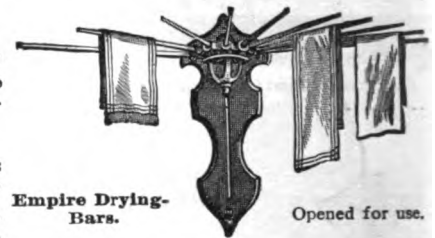
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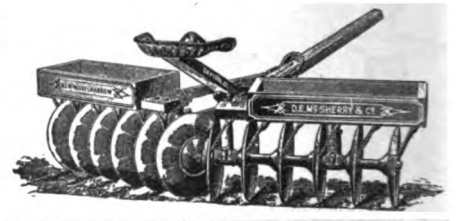
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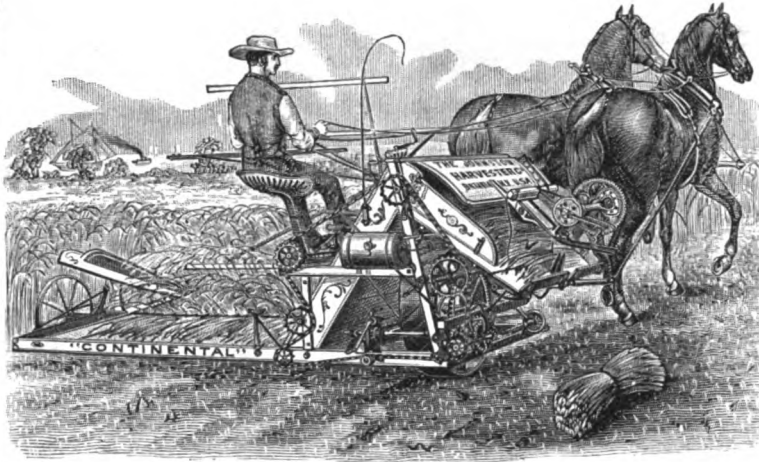
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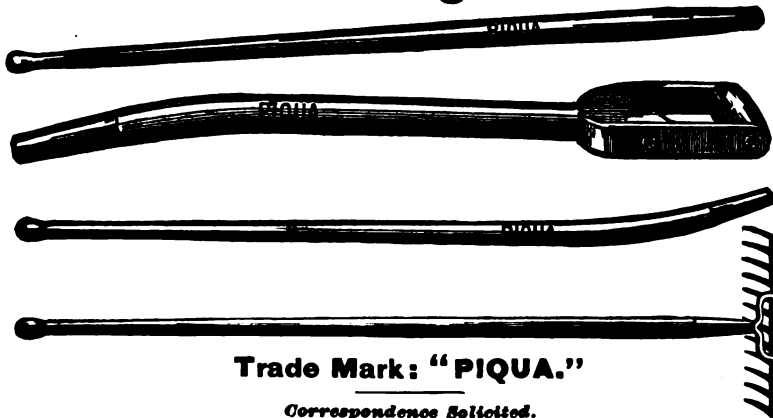
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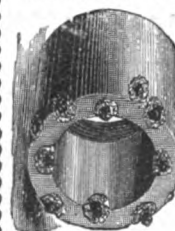


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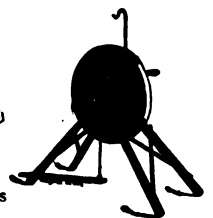
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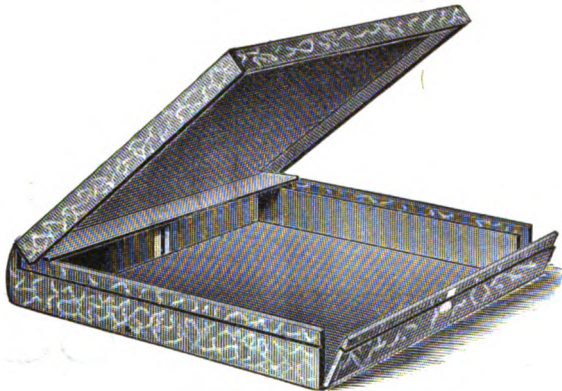




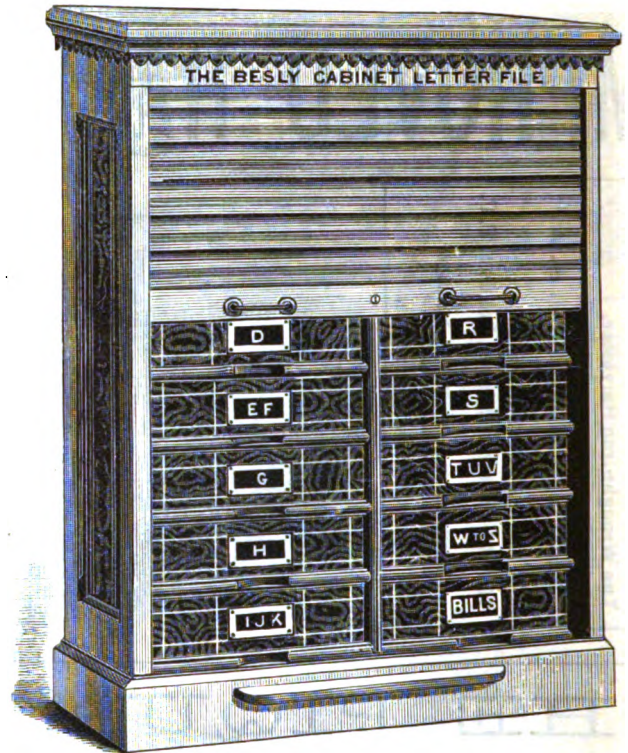
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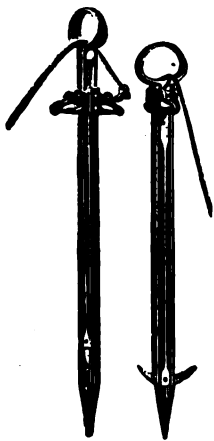


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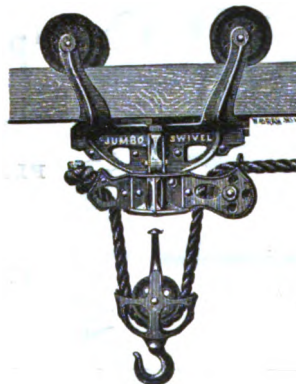


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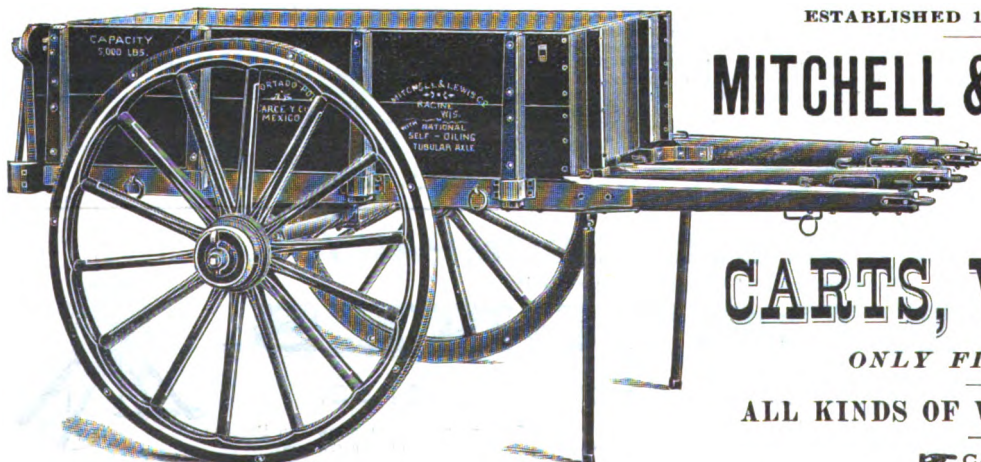
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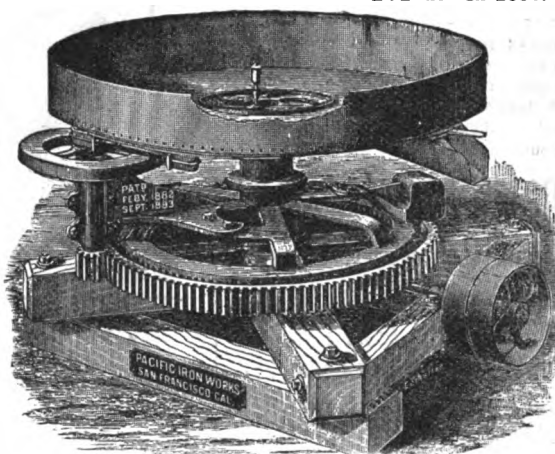
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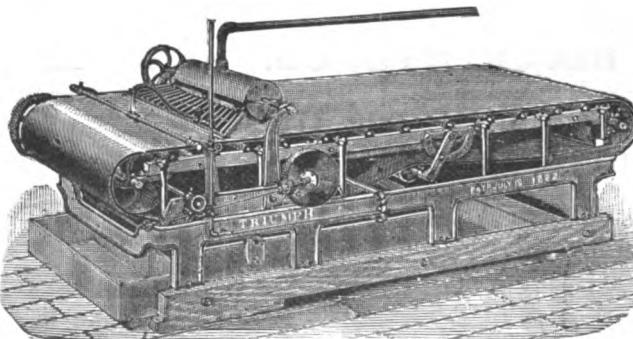
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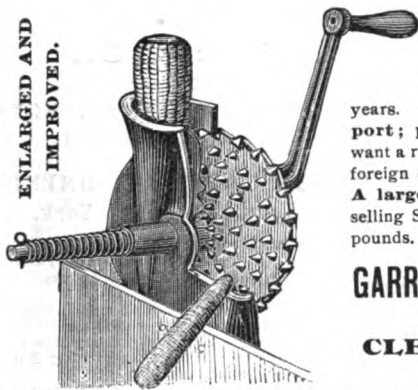
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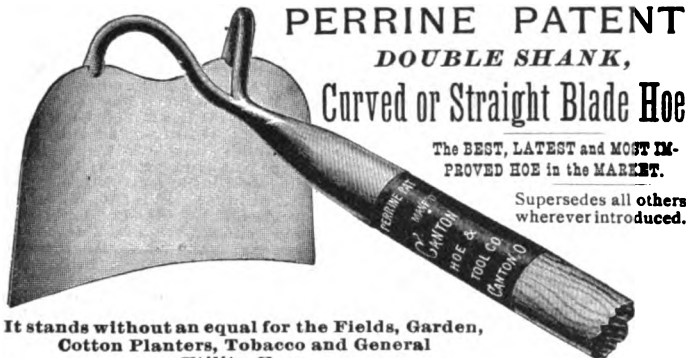
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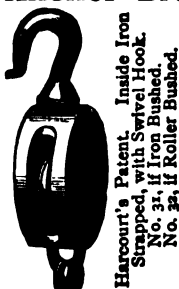


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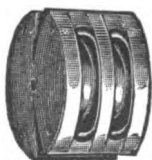
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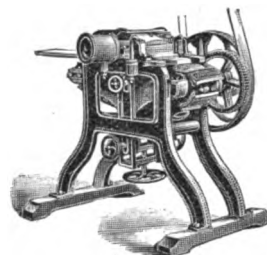
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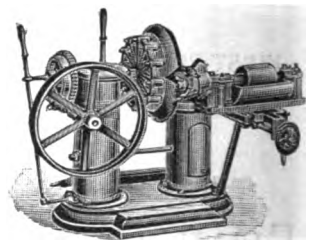
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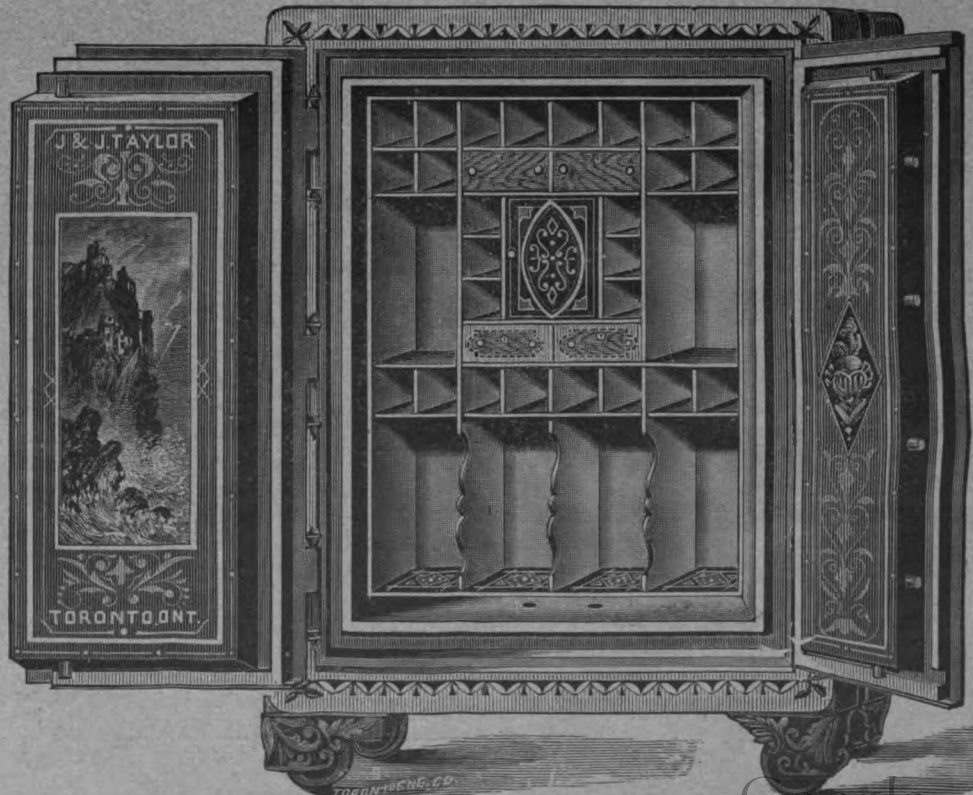
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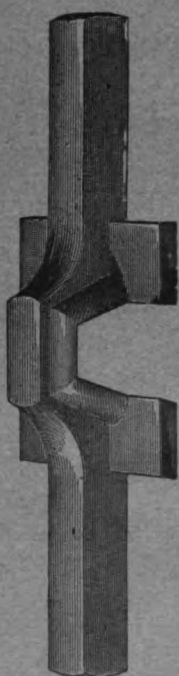
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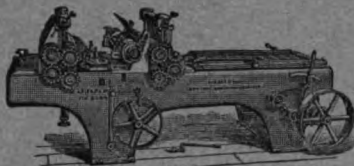
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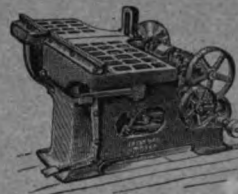




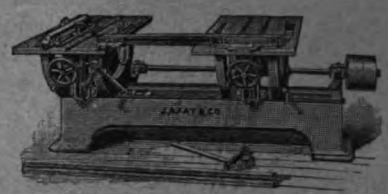
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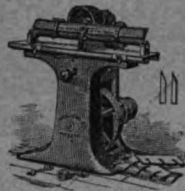
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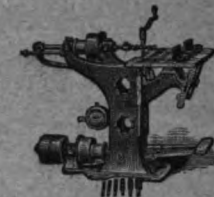
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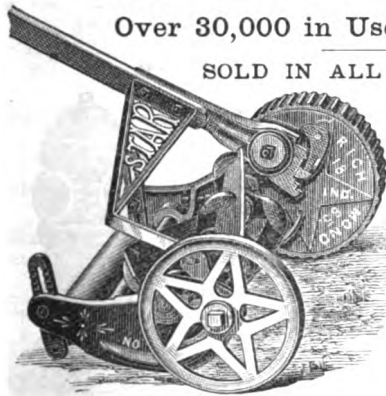
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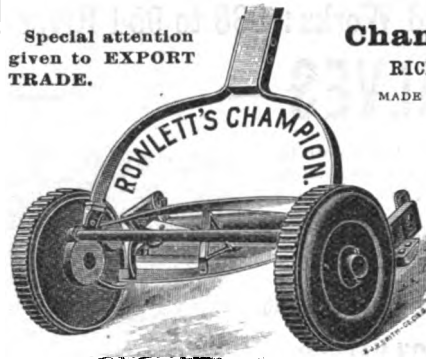
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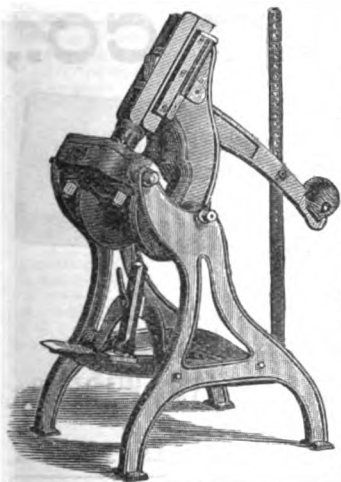
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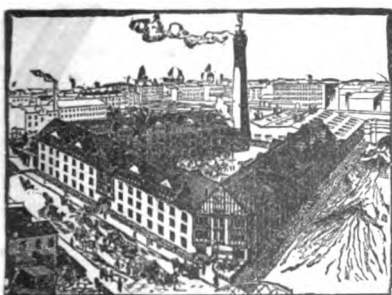
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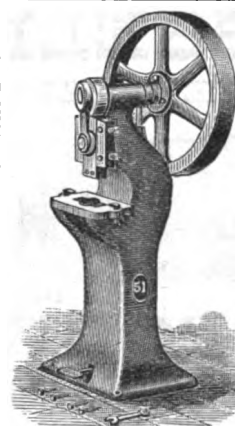
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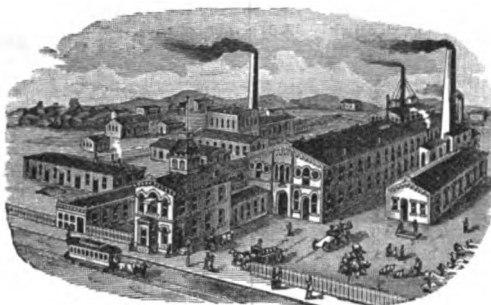


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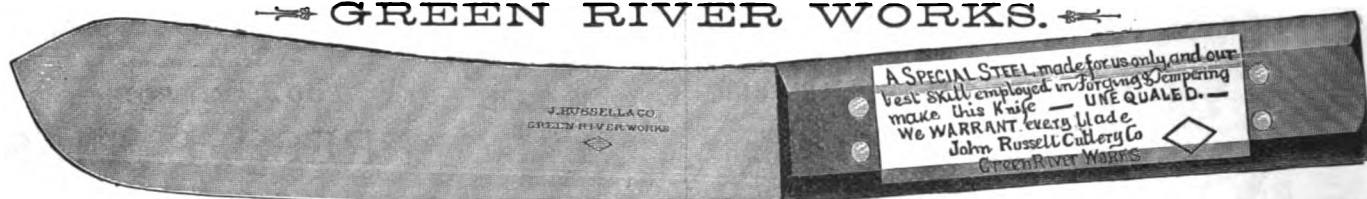
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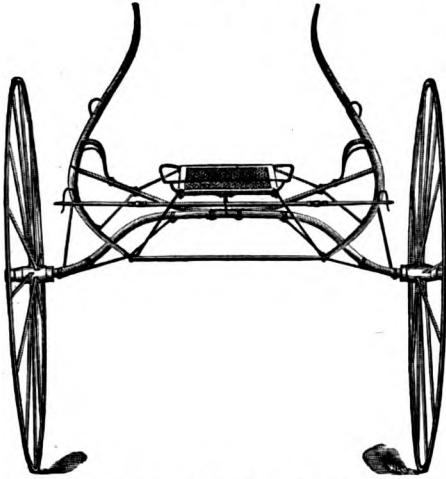
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Les titres de cette table des matières classifiées sont reproduits en cinq langues, anglaise, française, allemande, espagnole et portugaise, formant ainsi un GLOSSAIRE complet et mettant à même ceux d'entre les lecteurs qui ne comprennent pas l'anglais de trouver aussitôt la classe d'annonce qui les intéresse.

Die Überschriften dieses classifisirten Registers sind in fünf Sprachen nämlich auf Englisch, Französisch, Deutsch, Spanisch und Portugiesisch, und bilden so ein vollständiges GLOSSARIUM. Leser welche kein Englisch verstehen in Stand setzend, sofort irgend eine Klasse Anzeigen zu finden, welche sie interessieren möge.

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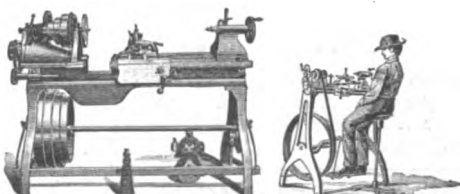
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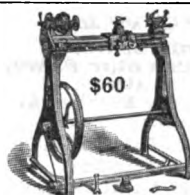
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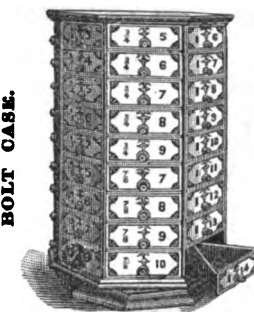
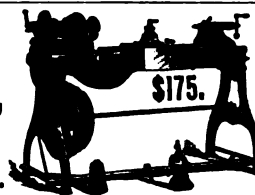
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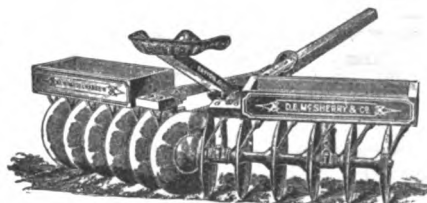
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## THE BRITISH PARLIAMENT AND HALL-MARKING.

**I**N the House of Commons on March 4, Mr. Kimber asked the Secretary to the Board of Trade whether his attention had been called to the case of Messrs. Robbins & Appleton, agents in this country of the Waltham Watch Manufacturing Company, who, having an order for Australia for 400 Waltham Railway watches, and having the movements in their possession and desiring to have them cased in this country, un-hallmarked, but, in American style, marked "Sterling  $\frac{1}{1000}$ ," applied to the Goldsmiths' Company for permission to have the order executed; whether such permission was refused on the ground that it was illegal for any watch-case manufacturers in the United Kingdom to be exempted from the compulsory obligation of assay and hall-marking; whether, as a consequence, the order had to be executed in America, to the loss of English watch-case makers of an order for 400 cases, and an estimated loss of 10,000 cases per annum; whether Her Majesty's Government would consider the expediency, in the interest of British industry, of abolishing the compulsory obligation of assay of watch-cases manufactured in the United Kingdom for export abroad; whether he was aware that parts of the works of watches are made abroad and put together sometimes with other parts made in this country, and that the Merchandise Marks Act (1862) Amendment Bill makes no provision for such cases, and whether the government intended to introduce any amendments to apply to them, and, if so, how they will be dealt with.—*London Daily Chronicle*, March 5, 1887.

John Bull suffers from the so-called Hall-Mark laws in more than one way. Silver goods generally have to be marked at some little cost for stamping. But the expense to the trade is not that trifling payment alone. For the trouble of sending the unfinished goods to the hall-marking office, the damage likely to be done to them through stamping and the delay incurred thereby are items that do count. However, this is the least of the grievances caused by the hall-mark law, for Great Britain lives chiefly on her export—and she necessarily exports a great deal to countries where the hall-mark is considered no better than the guaranty stamp of reliable manufacturers, and where people do not care to pay for the obsolete stamp tax levied in John Bull's own isle. There's the rub. The *Waltham* stamp, which goes annually on something like 300,000 gold and silver cases, means  $\frac{1}{1000}$  fine if it is accompanied by the word *sterling*, and  $\frac{1}{1000}$  fine if accompanied by the word *coin*. The Waltham Company alone turns out 80 per cent. more watches annually than all Great Britain together, for, according to the *London Times*, the total watch product of Great Britain in 1883 was only about 200,000, while the Waltham Company furnish fully 1,200 daily, or 360,000 watches per annum. The interest which this great company has at stake is, therefore, greater than what all Parliament has to deal with in this particular instance. And the fact goes without saying, that no manufacturer can live unless he makes his goods up to the standard represented by him.—*New York Jewelers' Circular and Horological Review*.

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**T**HE WALTHAM Chronograph is above all a thoroughly reliable timekeeper, and its mechanism to start, stop and fly back is of the simplest and most durable construction. While it is in every respect a fine and accurate watch, it is decidedly not a frail one, neither is it more liable to accidents than the plainest watch made. A notable feature of the Waltham Chronograph is that all its parts are on the top plate, freely exposed to view, showing at once that it is not a complicated watch. It is likewise important to the watchmaker that the fifteen or twenty pieces which make up the chronograph attachment proper can be easily examined without taking the watch down, and duplicates of any of these may at all times be obtained like all other Waltham watch materials. In case the chronograph attachment requires taking down, the regular timekeeping parts need not be disturbed.—*New York Jewelers' Circular and Horological Review*.

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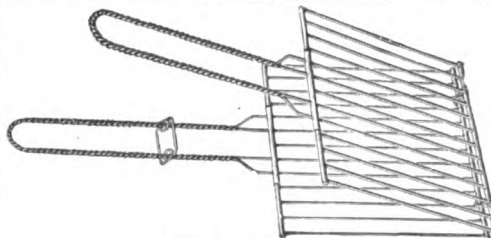
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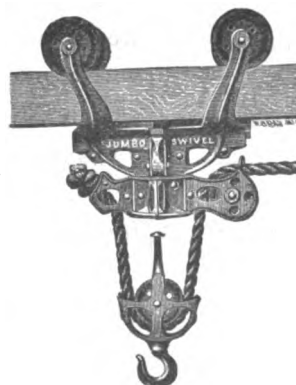
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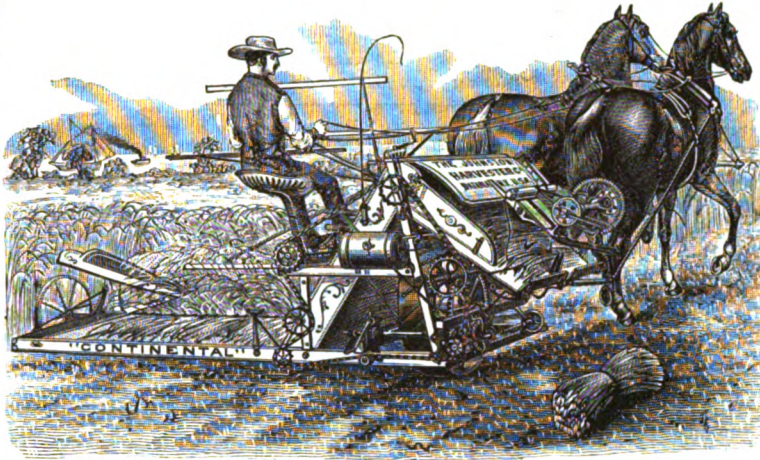
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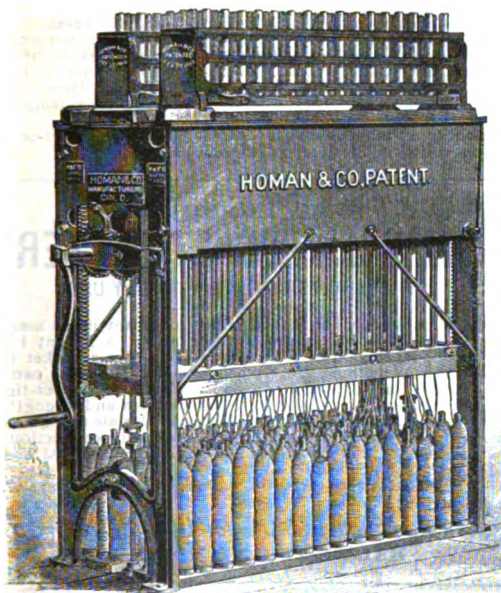
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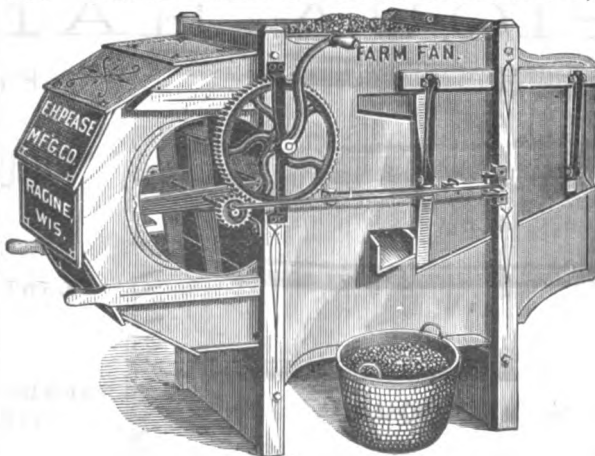
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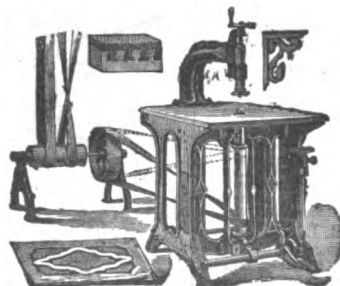
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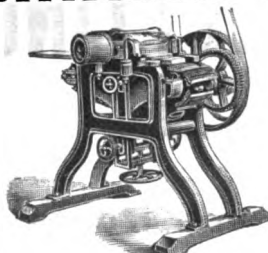
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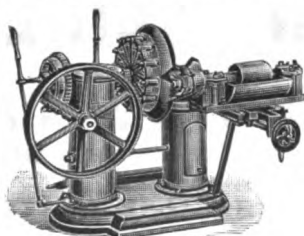
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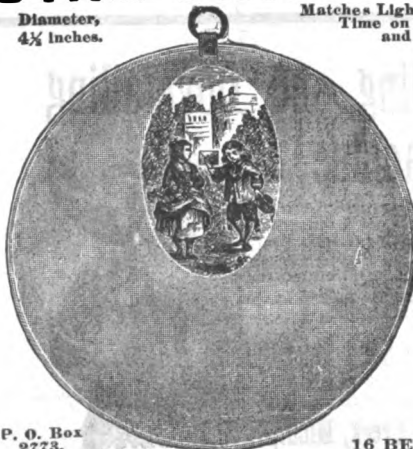


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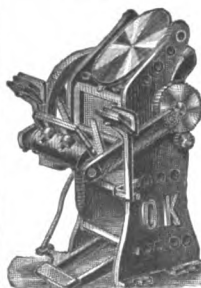
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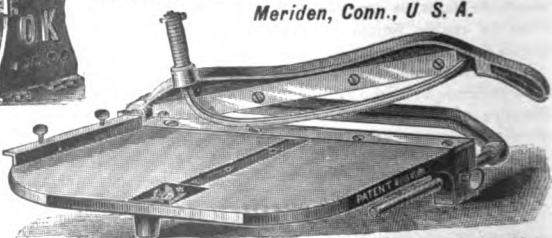
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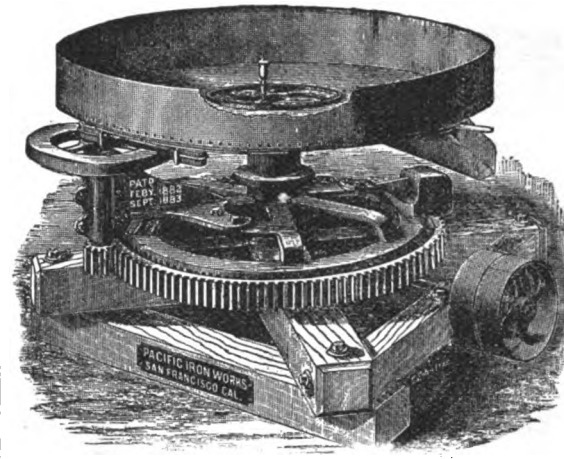
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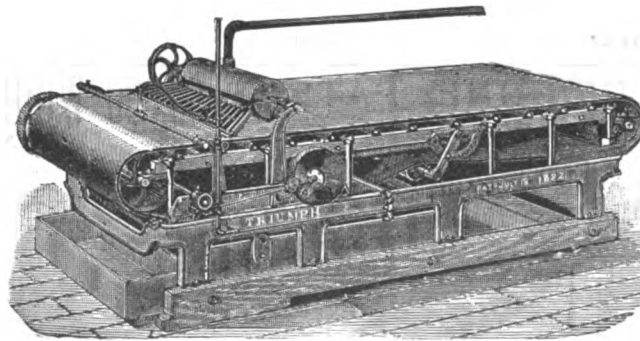
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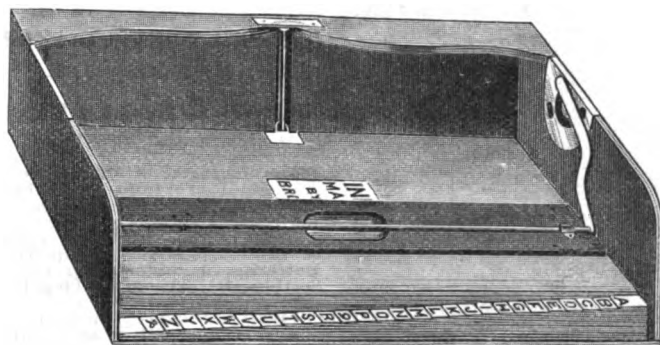
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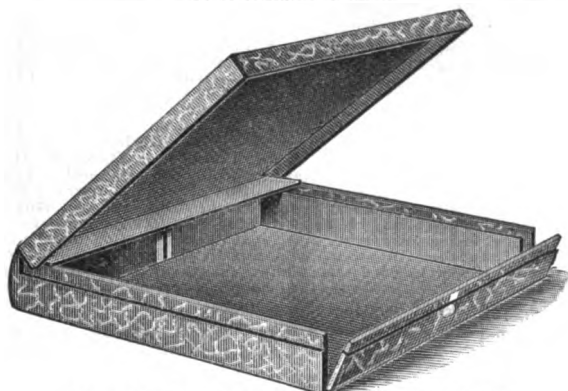




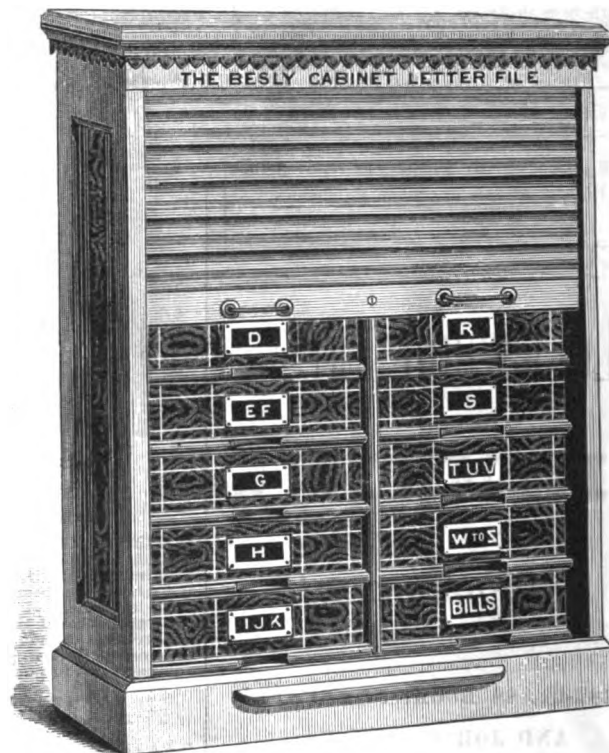
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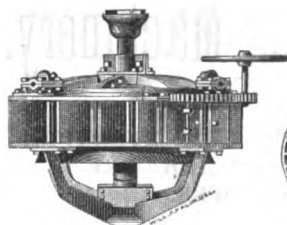
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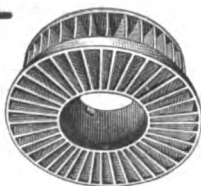
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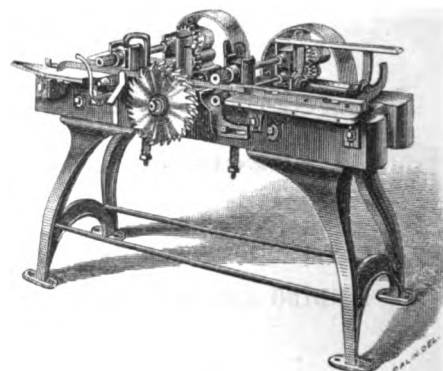


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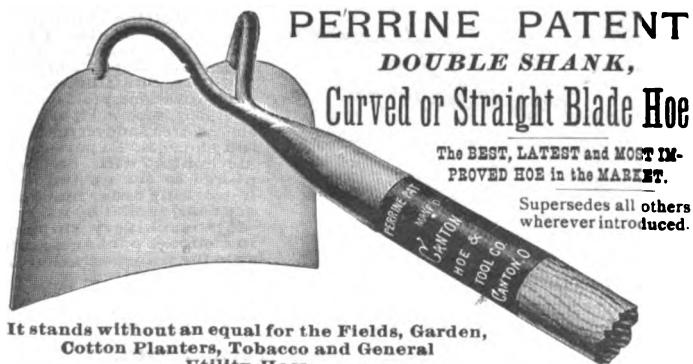


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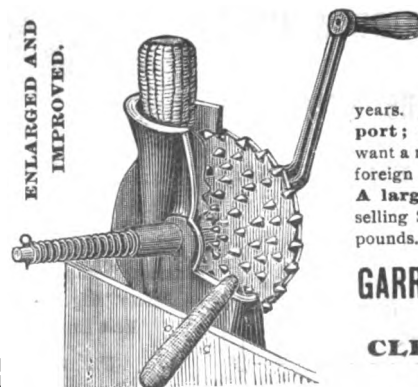


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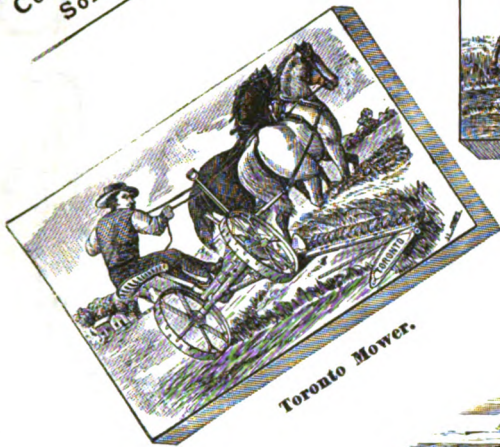
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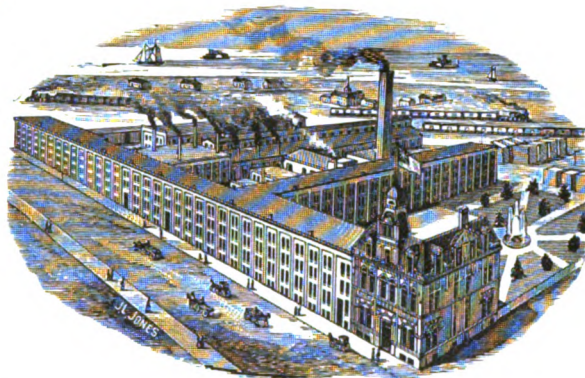
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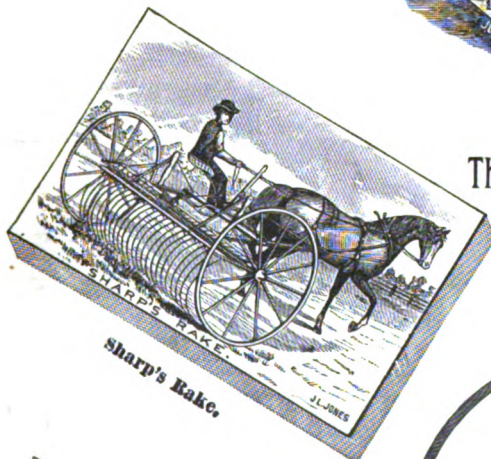
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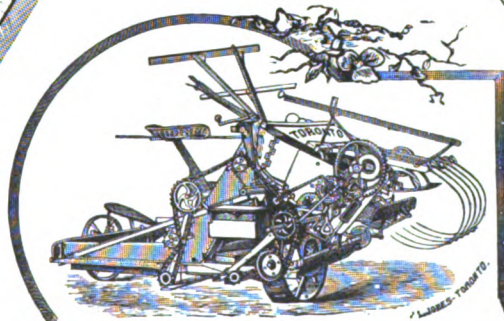
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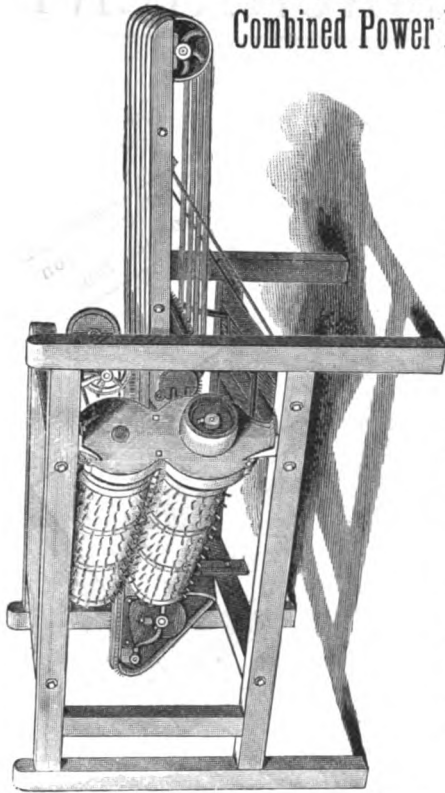
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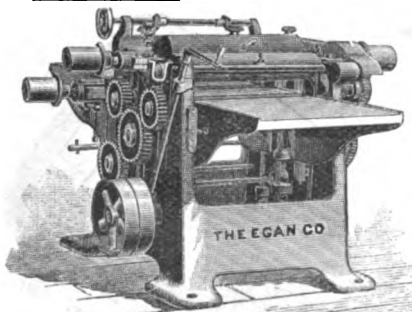
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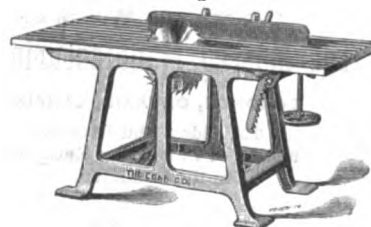
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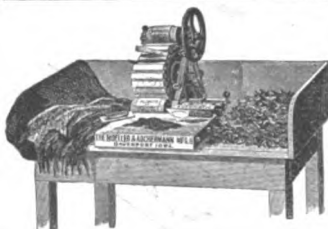
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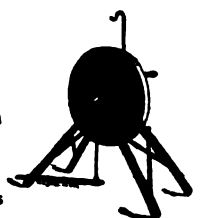
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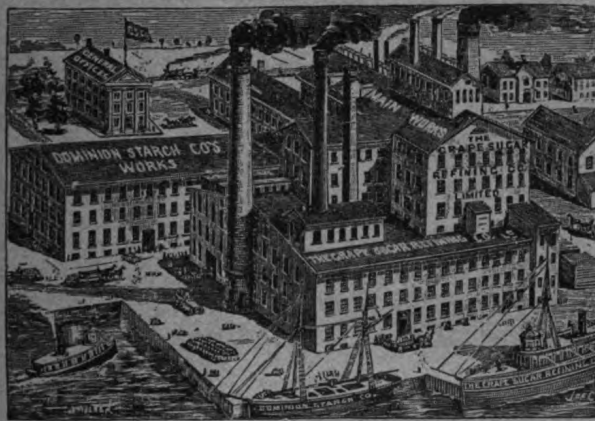
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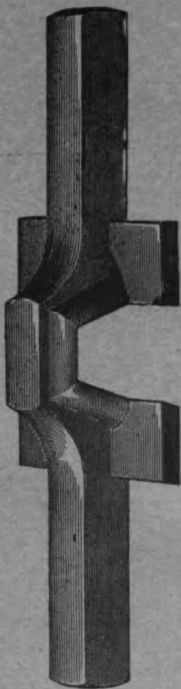
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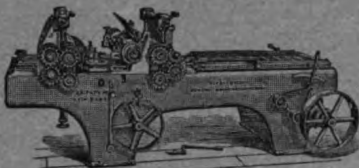
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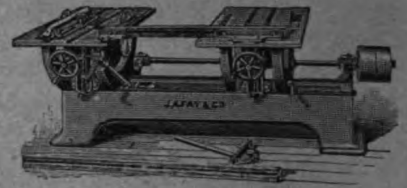
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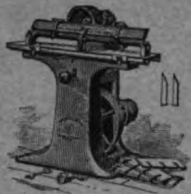
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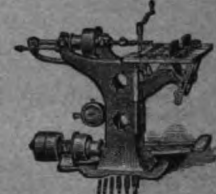
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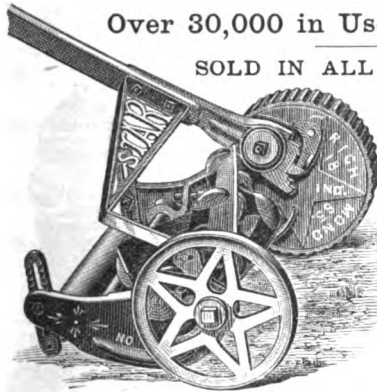
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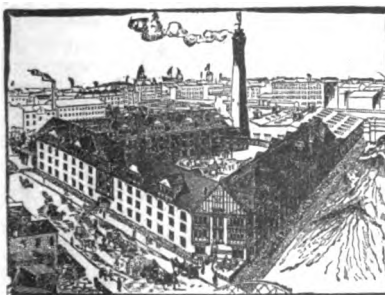
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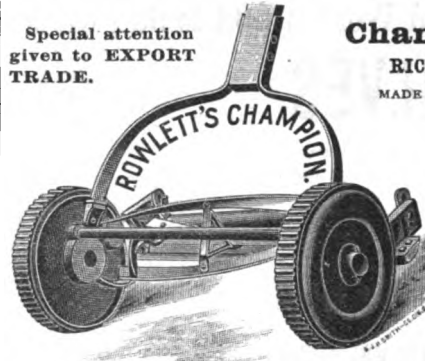
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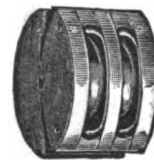
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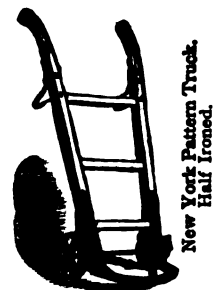
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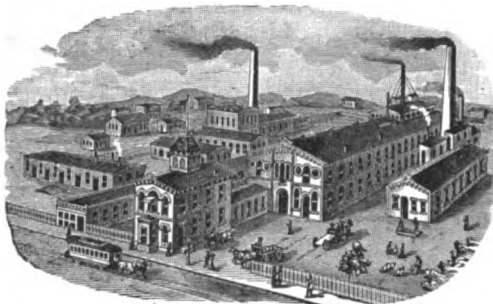


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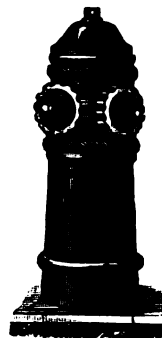
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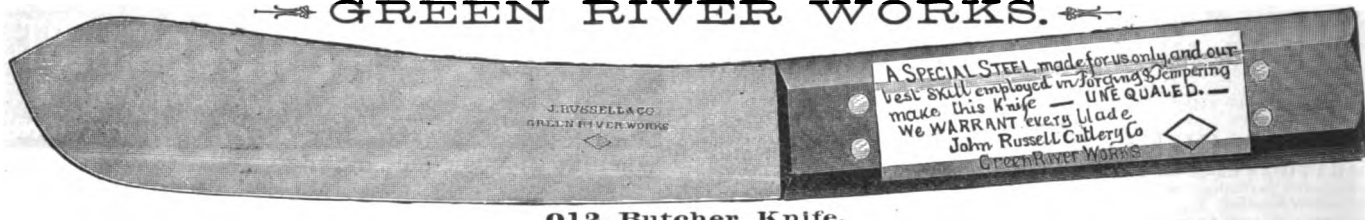
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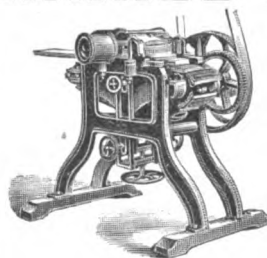


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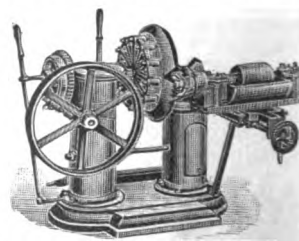
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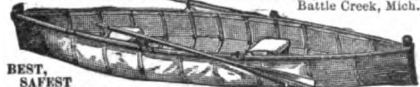
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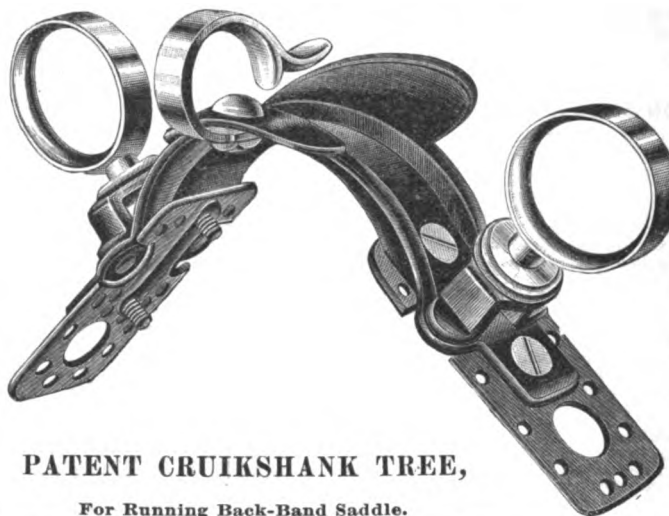
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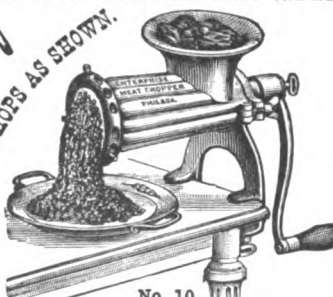
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Les titres de cette table des matières classifiées sont reproduits en cinq langues, anglais, français, allemand, espagnol et portugais, formant ainsi un GLOSSAIRE complet et mettant à même ceux d'entre les lecteurs qui ne comprennent pas l'anglais de trouver aussitôt la classe d'annonce qui les intéresse.

Die Ueberschriften dieses classificirten Registers sind in fünf Sprachen nämlich auf Englisch, Französisch, Deutsch, Spanisch und Portugiesisch, und bilden so ein vollständiges GLOSSARIUM. Leser welche kein Englisch verstehen in Stand setzend, sofort irgend eine Klasse Anzeigen zu finden, welche sie interessiren möge.

Los encabezamientos de este índice clasificado están impresos en cinco idiomas, ingles, francés, alemán, español y portugués, formando de esta manera un GLOSARIO completo para facilidad de los lectores que no comprendan el ingles y puedan hallar inmediatamente la clase de anuncios que los interese.

Os cabecilhos d'este Índice estão classificados em cinco linguas, Inglesa, Francesa, Alemã, Hespanhola e Portuguesa, formando d'esta sorte um GLOSARIO completo que facilita os leitores, que não comprehendem o Ingles, achar promptamente a classe dos annuncios que os interessa.

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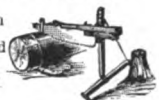


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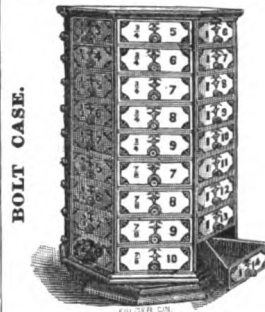


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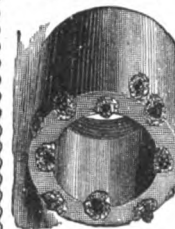
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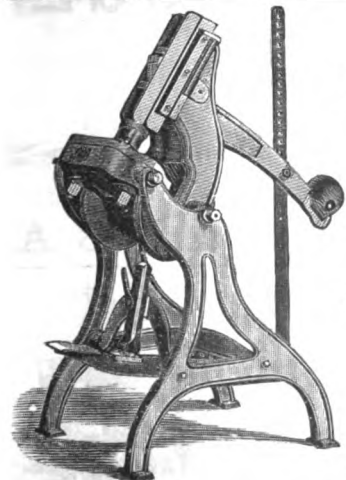
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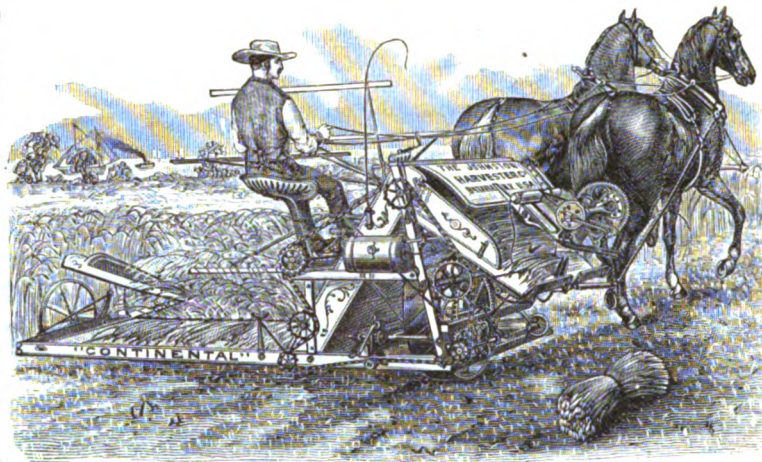
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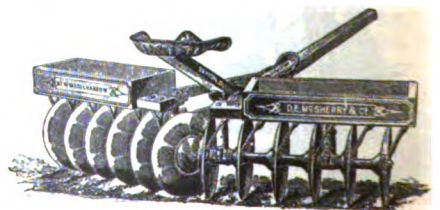
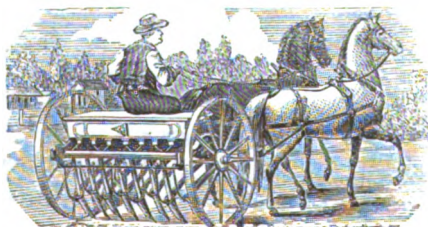
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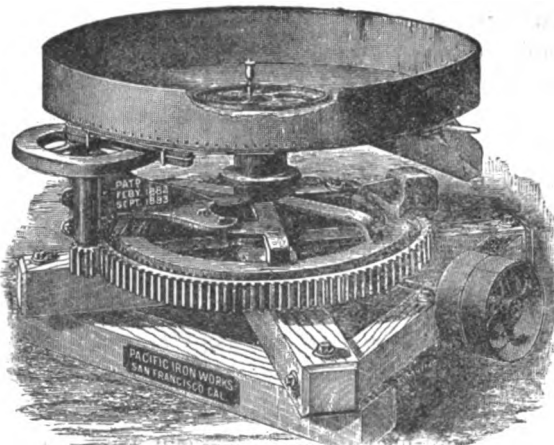
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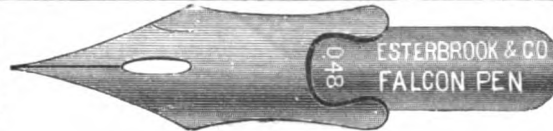
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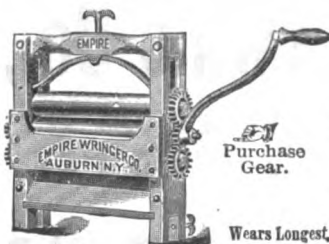


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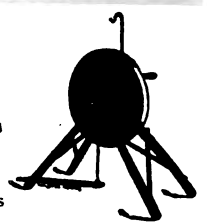
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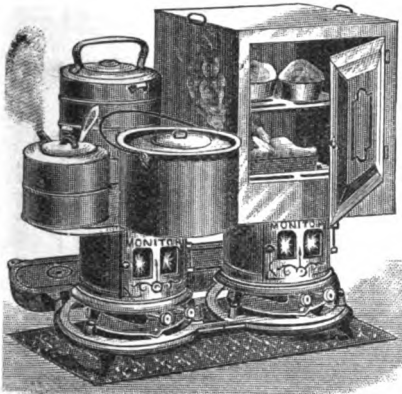
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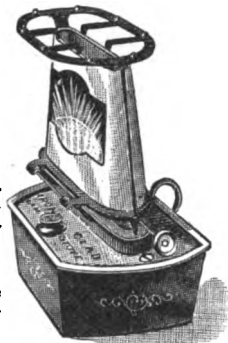
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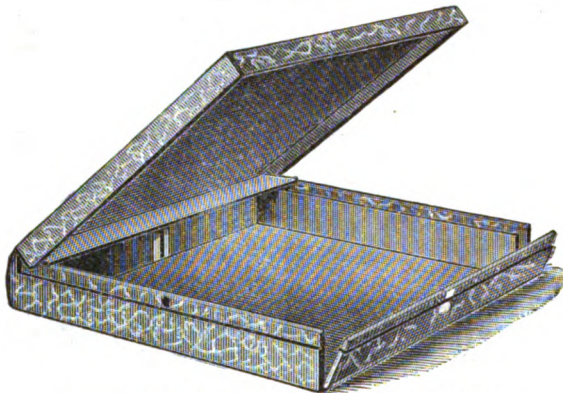
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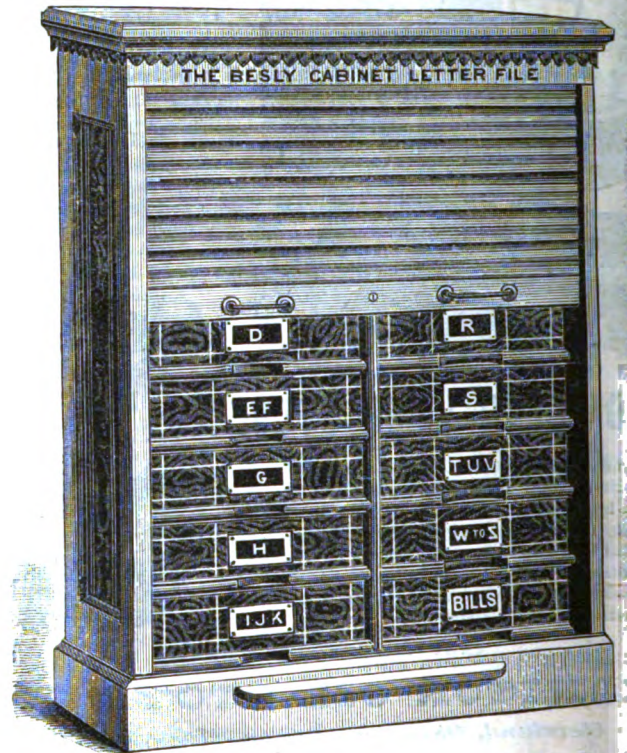
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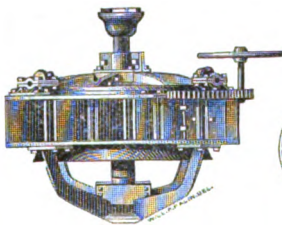
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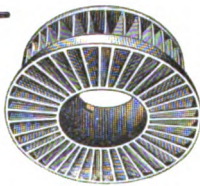
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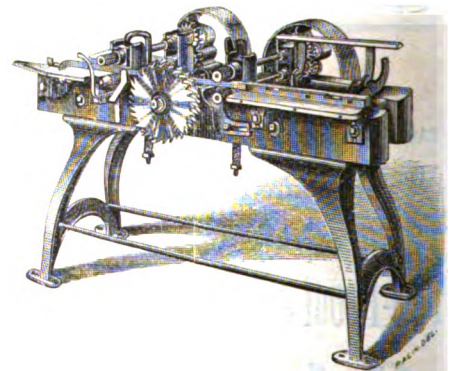
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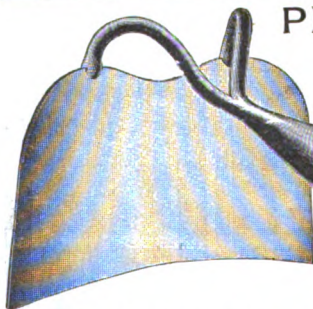
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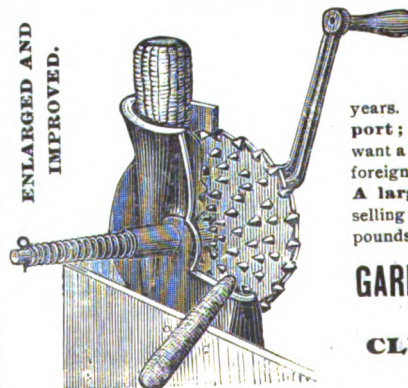
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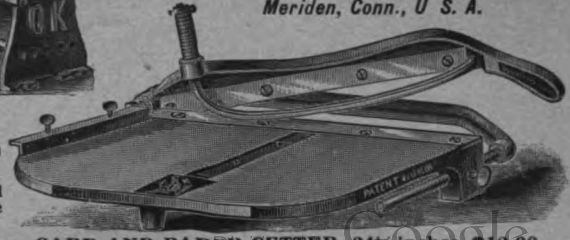
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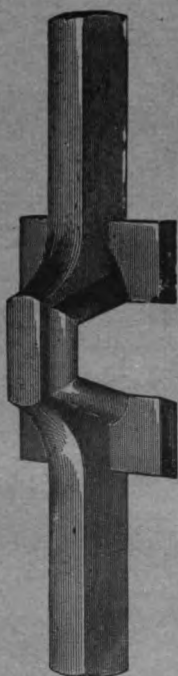
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